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Agriculture is the most healthy, the most useful, and the most noble employment of man.—WASHINGTON.

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THE

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AND

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UNITING OF THE FARMERS' CABINET WITH OUR JOURNAL.

THE Farmers' Cabinet and American Herd Book, heretofore so well edited and published by JOSIAH TATUM, of Philadelphia, has been consolidated in the American Agriculturist, by mutual consent. Mr. Tatum, the former proprietor of that paper, will hereafter act as agent for the Agriculturist, and furnish it to his subscribers at *One Dollar* per annum. Those receiving this number of the Agriculturist are solicited to forward the amount of their subscription, by mail, or otherwise, to C. M. Saxton, 205 Broadway, New York, or, if more convenient, to Josiah Tatum, No. 50 North Fourth street, Philadelphia. As no pains will be spared to render our paper as practically useful to FARMERS as possible, it is hoped that this arrangement will be satisfactory to the subscribers of the "CABINET," and that they will favor us with their continuance.

TIME FOR CUTTING WHEAT.

THE appearance, or condition, indicating the proper time for cutting wheat, depends on the variety. Thus, when the grain of red wheat can be squeezed between the thumb and finger, without any moisture being forced from it, cutting may always be safely commenced; for it is never better than when harvested in this state, and if cut later, the wheat is seldom so good in quality; besides, serious losses are sometimes sustained, in consequence of high winds when it is allowed to arrive at a riper state. The white varieties should stand somewhat longer than the red before they are cut.

With respect to the color of the straw, as a sign of maturity, experience has shown, that, if in a healthy state, the ear generally ripens before the straw; the yellowness of the chaff and upper parts of the straw indicates that the crop is fit to cut; and the uniform yellow color of the straw, shows that the crop has arrived at maturity, and, if suffered to stand in the field, the kernels are liable to be shaken out by the wind.

MANAGEMENT OF CHEESE DAIRIES, AND MANUFACTURE OF CHEESE.

HAVING been personally engaged, in 1845, in some sixty dairies, which were located in thirteen towns, and four counties, and more or less in the same manner the past two years, I have observed a marked difference in the capacity of soils for producing herbage, under different modes of culture, and the various conditions and treatment of cows, affecting their capacity for milk, both as regards *quality* and *quantity*. The inconvenient and improper fixtures, in many instances, for making and curing cheese, which are to be found, all unite in convincing me, that any set of rules for making cheese would not be practicable, even with the most proficient cheese maker; because,

In the first place, milk is a very sensitive fluid, and liable to be varied in quality by impure water, by damp and unventilated stables, change of diet, excess of feeding, excitement of temper, irregular milking, salting, &c., which destroy its susceptibility to produce like practice.

2d. Cheese, when pressed and exposed in a *curing process*, is no less sensitive, and equally liable to be varied in texture and flavor, by size of cheese, exposure to excess of heat, bad air, &c., the effect of which I shall hereafter notice. There are, however, leading principles which form the basis of operations, and should be closely adhered to *in all cases*, in the process of manufacturing cheese. *Salt, rennet, heat, and pressure* are the principal agents used in converting milk into cheese, the flavor and texture of which is determined by their proportionate use. Their proportion is varied by different dairymen, according to their notions of propriety, as best adapted to their fixtures, experience, &c. Hence arise the great inequalities in dairies, in the same neighborhood, and even in the same *dairy rooms* may be found as many different qualities of cheese as there are of fruit in an apple orchard. Some of these are matured at an early period, while others mature later, and are unsuited to the same market.

Much of the cheese being contracted for before it is made (in the early part of the season), both buyer and maker are liable to be disappointed in the cheese being suited to the market for which it is designed, destroying the confidence of purchasers, and injurious to the best interests of the dairymen. It is therefore necessary, that makers should have sufficient knowledge of the science to determine the result of their practice, which cannot be learned from verbal instruction. It is by *practical experience and close observation only*, that the maker can learn to adapt his practice to the frequent and extreme changes to which our climate is subject, varying the quality of the milk, and materially affecting cheese in process of curing.

The evening's and morning's milk is commonly used to make one-day's cheese. The evening's milk is strained into a tub, or pans, and cooled to prevent souring. This is done by running water through a vessel set in the milk, or setting pails filled with cold water into the tub, and stirring till cool; but little cream will rise over night.

The cream is taken from the evening's milk, and kept till the evening's and morning's milk are put together, and warmed to receive the rennet. This is often done by heating a part of evening's milk to a temperature that will warm the whole mass. Both are objectionable; *because the natural affinity which is necessary to preserve between the constituent parts a perfect coherence* is destroyed, by a portion of the milk being overheated. It is better to warm the whole mass in a manner that will produce an *equilibrium of heat*, which is best done by placing the vessel, containing the milk, within a larger vessel, with two inches under the bottom, and one inch of space at the sides, into which space water may be put to cool the milk, and into which steam may be let to warm the milk, and scald the curd. The more water surrounding the milk, the more uniform will be the heat. The cream, if added (which is generally done), is best incorporated with the milk, by putting it with twice its quantity of warm, new milk from the cow, and add warm water to raise its temperature to ninety-eight degrees. Stir it till perfectly limpid, add cream to milk, and then put in rennet, that the same stirring may mix both at once with the mass. If milk is curdled below eighty-four degrees, the cream is more liable to work off with the whey. *An extreme of heat will have a like effect.*

Curdling heat is varied with temperature of the air, or the liability of the milk to cool after adding rennet. A fine cloth spread over the tub while the milk is curdling will prevent the surface from being cooled by circulation of air. *No jarring of the milk*, by walking upon a springy floor, or otherwise, should be allowed while milk is curdling, as it prevents a *perfect coherence.*

Rennet.—Various opinions exist as to the best mode of saving rennet, and that is generally adopted which is supposed will curdle the most milk. I have no objection to any mode that will preserve its strength and flavor, so that it may be *smelt* and *tasted* with good relish, *when put into the milk.* Any composition not thus kept, I deem unfit for use, as the coagulator is an essential agent in cheesing the curd, and sure to impart its own flavor. The rennet never should be taken from the calf, till the excrement shows the animal to be in perfect health. It should be emptied of its contents, salted, and dried, without scraping or rinsing, and kept dry for one year, when it will be fit for use. It should not be allowed to gather dampness, for its strength will evaporate. To prepare it for use, into ten gallons of water (blood warm), put ten rennets, churn or rub them often for 24 hours, then rub and press them to get the strength. stretch, salt, and dry them as before. They will gain strength for a second use, and may be used when the weather will admit of soaking them to get the full strength. Make the liquor as salt as can be made, strain and settle it, separate it from sediment (if any), and it is fit for use. Six lemons, two ounces of cloves, two ounces of cinnamon, and two ounces of common sage are sometimes added to the liquor to preserve its flavor and quicken its action. If kept cool, in a stone jar, it will keep sweet any length of time desired, and a uniform strength can be secured while it lasts. Stir it before dipping off to set milk, take of it enough to curdle milk *firm* in 40 minutes. Squeeze or rub through a rag annotta enough to make the curd a cream color, and stir it in with the rennet. When milk is curdled so as to appear like a solid, it is divided into small particles, to aid the separation of the whey from the curd. This is often *too speedily done*, to facilitate the work, but at a *sacrifice* of *quality* and *quantity.*

The three *indispensable agents, heat, rennet*, and *pressure*, rightly applied, must keep pace with each other in effect. The two former operate to subdivide, the latter to aid, cohesion, by bringing the particles of a sameness closer in contact. This should be *skillfully* and *studiously* applied in a mild way, according to the capacity of the curd, to receive it. The less friction in working the curd the less waste. If *heat is raised too fast*, or commenced

while the curd is too young, the effect of the rennet will be checked, and decomposition will not be complete, and will result in a leaky cheese.

This often happens when steamers are used in small dairies. Heat may be raised in scalding *to keep pace with rennet;* if rennet is quick, heat may be raised quick, if slow, heat must be raised slow and held longer. Scalding heat may be carried from 96° to 104°, according to the cheese and temperature to which the cheese is exposed. During the process of scalding, the whey and curd should be kept in motion, to prevent the curd from settling and sticking together, as separating it is attended with great labor and waste, from friction.

When the curd is cooked, so that it feels elastic and will squeak when chewed with the front teeth, it is separated from the whey to receive salt. This is done by dipping it into a strainer over a basket, or sink, or drained off and salted in the tub. Either may be done without adhering in lumps, by stirring it in a small portion of whey, till cooled to 94°. This is the most critical part of the process, where cheese makers are most likely to err, as the portion of salt retained in cheese after pressing, will be in proportion to the capacity off curd to receive it when added. At a particular period and temper of curd, when draining off whey, it will absorb salt freely, and after being thoroughly mixed and packed up for a few minutes while warm, it will be evenly shrunk and cleansed by salt and whey, and will press out freely; but if the curd is *not well cooked*, or cooled too fast in draining off whey, it will acquire a degree of stubborness, prevent the absorbtion of salt to shrink and cleanse, and *no amount of pressure* will be sufficient to drive out the fluid.

If curd is not worked even, the larger lumps will not be cooked enough, or the lesser too much (like large leaves of bread and small biscuit baked together in one oven); hence the cheese is left impregnated with the elements of fermentation, which increase on being exposed to heat, till the cheese is sufficiently swollen, or huffed, for each constituent to occupy a separate space in the same shell, or rind. The fluids first attract together by affinity, forming small cavities in which they remain *unaffected by salt*, become fetid, and generate an unpleasant odor, which is fair proof of the quality of rennet used. Curd should be salted warm, it is then most absorbent, and thoroughly cooled before putting it to press, to suppress the combined action of *heat and rennet*. The quantity of salt required, varies with the condition of the curd, size of cheese, amount of heat to which the cheese is exposed in curing, and market for which it is designed.

A well-worked cheese, from fifty to one hundred pounds, requires one pound of refined salt to forty pounds of curd, to remain in the cheese after it is pressed and exposed to a temperature of from seventy to eighty degrees. This may be varied from two to four pounds to the hundred, according to the texture of cheese required—small cheese requiring less and large cheese more.

A degree of moisture is necessary in cheese for a malleable texture, but this should not be *from animal fluids retained in the curd*. A highly-salted cheese, immediately exposed to high temperature, becomes sour, hard, dry, and crumbling; the same exposed to a cool, damp atmosphere retains sufficient moisture to be soft, yet solid. A cheese light salted, in a high temperature, will cure quick, become porous, huffy, and stale. *Curd, from hay milk*, requires much less salt than that from grass or grain feed, as it is poorer and will retain salt, like lean meats. The richer the milk, the more salt is required to control the animal properties, and the *less absorbent the curd*, the pores being filled with the finer buttery particles.

More salt is required in hot weather, also, to overrule the *combined action of rennet* and heat, *neither of which will be effective alone*. When curd is ready to press, it is important to *dispossess these decomposing agents*. The gastric juice, or coagulator, is a *fluid*, and works off with the animal fluids in whey, and the only way to get rid of it, is to work the curd down *fine and solid, and work the whey all out*. Then cool the curd thoroughly before pressing, and the cheese will be solid and keep its place. But if the whey is not all out, the decomposer is yet on hand, continues its action, aided by heat, till *an equilibrium of chemical action is destroyed in the cheese*, and the fluid properties leak out in fetid whey and oil, leaving it a rank and worthless article. In short, the proper method of using salt must be arrived at by a close observation as to its *chemical combination* with the *constituent properties* at different ages of the cheese with different sizes, heat, dampness, &c. This, although an essential point, has not been sufficiently determined by chemical analysis, to be reliable.

Pressing.—When curd is properly tempered for pressing, a cotton or linen cloth is spread over the hoop, the curd is put in and pressed with from three to twelve tons' weight, turned twice in eight and forty hours, into clean dry cloth. The press should be faithful and follow down as the curd yields (when young), to press out whey before a rind is formed to prevent its escape. There is no danger of too much pressure, after the first ten minutes. The press, hoops, cloths, &c., should be cleaned with lye often, to keep rind from cracking. The cloth is taken from the cheese when it is taken from the hoop. The cheese is set on a table for a few hours, till dry enough to absorb oil, and then painted with annotta, mixed in strong lye (from common ashes), kept in a jar for ready use. This toughens the rind so that it will not require much grease after the first coat, to make a smooth rind, if rubbed often with the hand, moistened with oil.

The paint will fade to a rich butter color, which is as high a color as is desirable. A firm rind may be formed upon cheese, when young, by a careful exposure to drying air, frequent rubbing with the hand, and no more oil than will readily incorporate with the rind. If more grease is used than will be taken up, it will sooner or later flake off, leaving the cheese scabby, without rind, exposed to cracks, flies, mould, &c. Oil, for greasing cheese, is obtained from cream skimmed from whey, after standing 24 hours; it is churned, till separation takes place, like butter, then melted over a slow fire till it is turned to oil. A preparation of bees' wax, from ⅛ to ¼, mixed with oil, will make a rind impervious to flies. It is most desirable that cheese, designed for foreign markets, should be in a proportion half

as thick as they are wide, and not to exceed 100 lbs. in weight. The size of the hoop may be calculated from the number of gallons of milk; each gallon will make one pound of cheese.

A cheese 21 inches wide will weigh 14½ lbs. to each inch in depth.

"	20	"	"	12	"
"	19	"	"	10½	"
"	18	"	"	9	"
"	17	"	"	8	"
"	16	"	"	7	"
"	15	"	"	6	"
"	14	"	"	5	"

Cheese of the above proportions are banded with cotton cloth to keep them in shape The band should not cover more than an inch or inch and a half of the flat surface. Heavy cheeses must be banded with cloth that will not stretch, or their gravity will make them ill-shapen.

In 1845, the experiments alluded to, with sixty dairies, being got up expressly for shipment, a selection was made from the largest and most experienced dairymen in thirteen towns. A vigorous effort was made to reduce the whole practice to one general rule, consisting in *strict cleanliness in every department*, an equilibrium of heat in milk to set, not exceeding ninety degrees, with pure rennet to curdle milk in forty minutes; curd thoroughly worked by hand, till as fine, when scalded, as wheat or corn: curd scalded in whey with heat not exceeding one hundred degrees, and that heat held until the curd appeared shrunk, and would squeak when pressed between the front teeth. The whey to be drained off, and the curd salted, while warm, with 2½ lbs. of refined salt to 100 lbs. of cheese, cooled and pressed forty-eight hours. Cheese half as high as wide.

These leading points, strictly adhered to, were found adequate to produce the article required, where curing rooms were constructed so as to preserve a *uniform moderate, temperature*. The cheese, not affected by extreme changes of climate, fermented slowly and uniform, rind firm and smooth, with little grease; texture firm and solid, yet malleable like butter; the flavor mild and pleasant. The weather being cool till June, a great uniformity was manifest in shape and texture. A sudden change of weather to 88° heat, lasting several days, produced a contrast, in different dairies, equal to the extreme in temperature, which was found in many dairies, to exceed the common atmosphere from 8° to 10°. With little or no ventilation in these, cheeses were much swollen, and could be kept in shape only by using *less rennet and more salt*. The *huffed cheese* remaining in same rooms became tainted, or generated a sharp unpleasant flavor; those removed to a temperature suited to their constitution cured quick, and were well adapted to early home markets. Those salted high enough to stand the excess of heat, were hard, dry, crumbly, and smart. A dry room was found best for a wet cheese, and a damp room best for a dry cheese; but in no case was a high temperature (exceeding 75°), found necessary.

Having previously written at considerable length upon *general treatment, adaptation of food*, I shall not here go into a lengthy detail, but a few hints may not be inappropriate. The success of dairymen (like grain growers), depends much upon adapting their practice to the provisions of nature. Cows should be in a condition to yield the greatest flow of milk, upon the cheapest and most spontaneous productions from the earth. Maize, mangel wurtzel, cabbage, carrots, and ruta bagas (of the cultivated crops), yield the largest product per acre, and from the varied periods at which they arrive at maturity, are well calculated to protract the flowing of milk till late in the season. Those most perishable to be used first. It is proved by experiments, that a cow will give the most milk from the same amount of food, during the first sixty days after gestation begins. My cows yielded 45 lbs. milk per day, the first of March, on 25 lbs. of good hay and 4 quarts of provender in slops. The first of June diminished in quantity, and the first of November on same feed, gave only 20 lbs. per day. Other cows of equal quality, coming in from the middle of April to the first of May, gave, on the first of June, 55 lbs. of milk on grass only, and held a good flow of milk through the season. On the first of December, they gave 20 lbs. of milk each, while those in milk the first of March, were nearly dry, upon the same feed, proving conclusively, that cows in general, will yield more and better milk from first of May to January, than from first of March to January. The months of March and April require much more labor and grain feed, that would otherwise turn to money. *Nature* provides, in *spring time*, a principle of *general progressiveness* in the animal and vegetable kingdom. The thriftiest growth of spontaneous product is in May and June, and cows should then be in a condition to receive its aid.

If seed of a spring crop is sown too early, the crop will be stinted; so with cows that calve in February and March. Nature having made its master effort in the animal economy, it cannot be revived again in spring time of vegetation, and in the fall, when farmers have more or less of coarse perishable food, like pumpkins, apples, etc., they are not in so good condition to yield milk, as when they are started late, and their flowing is kept up by sowed corn or other succulent food.

I realized the greatest net product of cheese in 1844 and 1845. Commencing April 20th, with half my cows in milk, average yield in 1844, 700 pounds, per cow, market weight. In 1845, average yield, 775 pounds per cow, weighed daily from the press, averaging five pounds per cow, per day, during the first five months. Less grain was required to keep their flowing of milk the five months, than in the months of March and April, when commencing on the 10th of March.

No *one kind of grass*, or other food, is found to produce so much, *nor so good* milk, as good pasturage upon soil yielding a great variety of grasses, each maturing at different periods, and furnishing in their turn the *flower of feed*, from which the finest flavor of butter and cheese is derived. Such soils are prevalent in this county, where the land is elevated and not over worn with tillage. Low, marshy grounds, and those having a northern or north-western descent, are exceptions.

A difference of from 5 to 10 per cent. is frequently shown by the lactometer in the quality of milk from neighboring dairies, the proof being in favor of those *best fed and husbanded*. The prac-

tice is prevalent among dairymen of pasturing the low, wet, and shady portions of their farms (if they have such), and using for meadows the more arid portions. In some such locations, it is impossible to make a fine flavored cheese. The curd works *tough* and stubborn, and cheese is invariably of a harsh, rank flavor. If this practice should be reversed, and the low lands used for meadows, and the elevated, warmer portions grazed, I have no doubt a great improvement would be made in our dairy products.

More care is required in working curd where whey and grain is fed, than when cows are grazed, as the milk is richer, and cheese more apt to be harsh flavored; when cows *are in heat*, their milk should not be put with the rest till thoroughly cooled. It is often *rank and bitter*, and will sour in a few hours. If cows eat salt largely, beware of soft leaky cheese; it retards the effect of rennet to decompose. Salt should lay by the cows that they may take a little daily. Corn sowed *in drills* will produce more milk, arising from the cultivation and effect of sun and air. If fed when too old, it is not succulent and will dry up the milk.—*Transactions N. Y. State Ag. Soc.* A. L. FISH.
Litchfield, Herkimer Co., 1847.

ADULTERATION OF FOOD.—No. 1.

THE adulteration, or falsification, of food, with the view of making one substance more saleable by improving its appearance by the addition of another, either harmless or otherwise; or of fraudulently depreciating its quality by adding to it some innocuous, or deleterious substance, diminishing its *real*, without altering its *apparent*, value, is of no recent origin; for in every nation, and in every time, similar modes of procedure have been adopted and flourished, and in many instances, by the aid of science, the avarice, dishonesty, and misplaced industry, (or all three combined), of some parties have raised adulteration to the standing of an art, and so ingenious have those become who have dealt in these mysteries, that it has required the greatest tact, labor, and circumspection, to bring their iniquitous proceedings to light. Indeed, in many cases, these frauds, or sophistications, have been so novel in their character, and have been executed with so much skill, that, not only the officers specially employed for the investigation, but even the chemists themselves, were not able to detect the deception.

It may not generally be known, that nearly all the substances used, either as articles of food or clothing, are adulterated, debased, or badly manufactured, and to an extent, too, in many instances, that, at first, would be deemed almost incredible. Some of these frauds consist, merely in deceiving the purchaser, or consumer, either in weight or measure; others reduce the quality of the article by mixing with it some substance which may be harmless in itself, while, not a few, go so far as to add highly deleterious, and even poisonous materials with those which are absolutely necessary to life! What deadly and pernicious effects must be produced by a continued introduction of such substances into the system, day after day, month after month, and year after year, however small, however trivial, however comparatively insignificant or unimportant one small dose might seem, but causing in the end, the most disastrous, and often fatal results!

It must not be supposed, however, that every *person*, who deals in adulterated goods, is guilty of fraud; for certain cases are known, in which the articles have either been supplied him in a counterfeit state, when it was thought that they were absolutely pure; or the admixture has been accidental, and oftentimes is the result of carelessness and inexperience. For, many articles of food derive poisonous constituents from the vessels employed in their manufacture, as the action of acids, vegetable juices, fatty matter, &c. on those made of copper, zinc, or lead.

In every well-governed state of continental Europe, we are informed, there exists a board of health (Conseil de Salubrité), composed of eminent physicians, chemists, and engineers, appointed to watch over whatever may injuriously affect the health and comfort of the citizens. In Paris, this commission has heretofore consisted of seven members, who have the surveillance, in this respect, of the markets, factories, bakeries, meat shambles, medicines, places of amusement, &c., and on the detection of any falsified, or pernicious articles of medicine, or food, it is immediately seized, or destroyed, and the culprits manufacturing, or offering them for sale, are fined, or punished, according to law.

The municipal law of Prussia (Allgemeine Landrecht), contains the following enactments with regard to the sale of injured, or adulterated food:—"No person shall knowingly sell nor convey to others, for their use, articles of food or drink, which possess properties prejudicial to health, under a penalty of fine and bodily punishment. Whosoever adulterates any such food, or drink, in any manner injurious to health, or mixes with them unwholesome materials, especially by adding any preparation of lead to liquors, shall, according to the circumstances of the case, and the degree of damage to health, be liable to imprisonment in a house of correction, or in a fortress, during a period, varying from one to three years. Besides this punishment, those who are found guilty of knowingly selling food, or drink, which is damaged, or spoiled (verdorbener), or mixed with deleterious additions, shall forever be prohibited from carrying on the same branch of business. The articles in question shall be destroyed, if beyond the means of amendment, but if otherwise, they are to be improved, as far as possible, at the cost of the culprit, and then confiscated for the benefit of the poor. Furthermore, whoever mixes food, or other goods, with foreign materials, for the purpose of increasing its weight, or bulk, or its apparent good qualities, in a deceptive manner, shall be punished as a swindler."

We are happy to learn that strenuous efforts are now making, in different states of the Union, for Congress to pass an act for the suppression of adulterated drugs and medicines, and the punishment of the culprits, who may knowingly be detected in their manufacture, or in offering them for sale. We would suggest that it would be a measure of great utility, if not of equal importance, for similar laws to be passed in relation to the adulteration of food and every other article appertaining to comfort and public health.

In the course of this series, we shall endeavor to confine ourselves to a review of such articles as are in common use, as food, or drink, and are generally subject to adulteration, or falsification, either at home or abroad. Among these will be included *flour, grain, bread, starch, arrowroot, milk, cream, butter, cheese, oil, lard, honey, sugar, molasses, tea, coffee, chocolate, salt, mustard, pepper, ginger, spices, pickles, confectionary, wines, spirits, beer, cider, vinegar, nuts, fruit, &c.* To the above-mentioned, might be added the frauds practised in substances not used as food, such as soap, candles, snuff, tobacco, jewelry, silks, cottons, woollens, linens, dye stuffs, and drugs, several of which, it is not within our province to deal.

SCALES FOR WEIGHING.

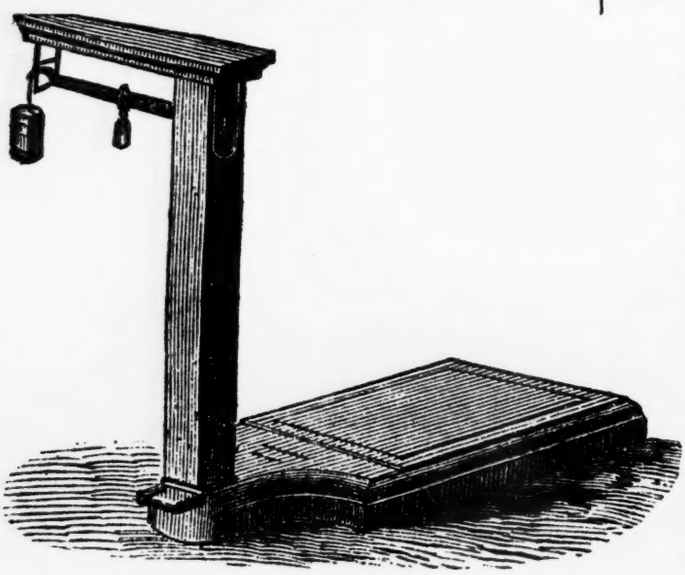


FIG. 53.

PLATFORM SCALES.—These are made of various sizes, to weigh from one pound to over a ton. They are perfectly accurate, and are so constructed as not to be liable to get out of order. When worn, or broken by long or rough usage, they are easily repaired. Prices, from $20 to $25.

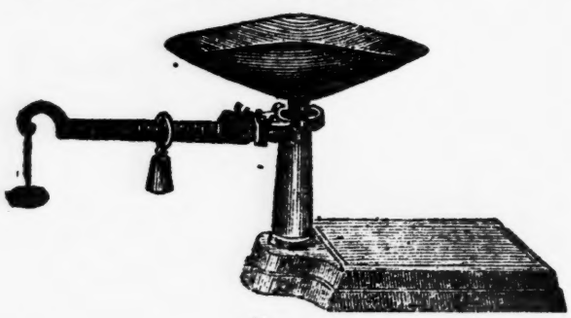


FIG. 54.

COUNTER SCALES.—These are made with the same accuracy as the platform scales, but much lighter, to weigh smaller quantities. Prices, from $6 to $7.

Any of the foregoing articles can be furnished both at wholesale and retail.

THE COW—HER DISEASES AND MANAGEMENT.—No. 3.

AMONG the diseases of the cow requiring the greatest attention in their treatment, are inflammations, which are violent in their attacks, rapid in progress, and must be opposed by the most powerful means of relief; otherwise they will frequently result in the death of the animal. A disease of this class, which requires immediate attention is

Inflammation of the Brain, called also "frenzy," or the "slough." The cause of this malady may proceed from the suppression of natural evacuations, from exposure to extreme heat and cold, injuries of the brain, &c., &c. Unless taken at the commencement, it is apt to terminate in suppuration of the brain, and not unfrequently in mortification.

The prevailing symptoms of the disease consist of a constant watching and raving, the breathing is slow, the countenance appears much disturbed, and all the marks of madness are conspicuous in the wild look and fierceness of the animal. On examining the pulse, at the temporal artery, the beating is strong and rapid, and sometimes irregular. Along with this, may be observed a peculiar redness of the eyes, the urine is always highly colored, and she is occasionally seized with profuse perspiration and convulsed motions, when agitated or disturbed.

In the treatment of this disease, bloodletting is the principal and only remedy to be depended on. Hence large and repeated bleedings should be immediately had recourse to, as soon as the malady shows itself; the blood should also be taken from a large orifice, if a vein be preferred; but the best situation for drawing the blood in this case, is the temporal artery.

Next to bleeding, purging will be found a useful remedy, in order to procure a revulsion of the blood from the head; and the doses for this purpose should be strong, and speedy in their operation; thus,

Take Epsom salts (sulphate of magnesia), 2 lbs.; nitre (saltpetre), 1½ oz., and mix for one dose; to be given in 2 quarts of thin gruel and ½ pint of molasses.

When this has operated, and bleeding has taken place to a sufficient extent, small doses of nitre and camphor, prepared after the first formula prescribed for a cold at p. 142 of the present volume; and in general the same diet and after treatment apply here as directed for fevers, at p. 176.

Inflammation of the Lungs.—This disorder, sometimes known by the names of "fog sickness," and "rising of the lights," is a disease to which cattle are very subject. Its principal cause is whatever occasions obstructed perspiration. Hence it is brought on by dry, cold winds; also from drinking too much cold water when over-heated, or in being kept too long from water. It is also frequently occasioned by being turned out into a pasture that contains much cold dew, or is covered with hoar frost.

The disease is known by great difficulty of breathing, attended with a cough, or hoose; the cow opens her mouth wide; the tongue is thrust out; the nose and mouth discharge a ropy slime; the eyes appear dull and heavy; the pulse hard; and she is unwilling to lie down. When moved, she appears uneasy, and in giving her drink, it seems as though she would be choked in attempting to take it; she is also very costive; the external surface of her skin feels cold, particularly on the legs, ears, and at the roots of the horns; and, as the disease progresses, she becomes very restless and often is unmanageable.

Bleeding, as in the preceding case, is the principal remedy. The animal should be bled freely, and from a large orifice; as a timely bleeding will often do much to check the disease at its commencement. After this, the best practice is, to *peg* the cow in the dewlap with the following mixture:

Corrosive sublimate (bi-chloride of mercury), 1 drachm; euphorbium, ½ drachm; hog's lard, 1 oz.

First, an incision is to be made in the dewlap; the skin is then to be separated from the flesh sufficiently to admit the quantity of medicine directed above, which must be introduced into the wound. As soon as the swelling or inflammation in the dewlap has taken place, relief will be given to the lungs, and the inflammation will begin to decrease. In the mean time, till this takes place, the bowels should be opened, by a dose of medicine prepared agreeably to the first formula given at p. 142 of the current volume. After this, an attempt should be made to open the pores of the skin, and to remove the general contraction of the surface, by the following mixture made into a ball with fennugreek powder and molasses:—

Tartar emetic, 1½ drachms; camphor, 1½ drachms; calomel, 6 grains; nitre, ¾ oz.; opium, ¾ drachm.

This medicine may be repeated twice a day till the skin is rendered free and perspirable, and the more alarming symptoms of the disease depart.

The diet and other parts of the treatment, correspond precisely with those detailed in the treatment of inflammation of the brain.

A Curious Fact in Butter Making.—According to Professor Johnstone, the time and frequency of milking have a great influence on the amount of butter yielded by milk. If a cow be milked only once a day, he says, the milk will yield a seventh part more butter than an equal quantity of that which is obtained by two milkings in the day. When the milk is drawn three times a day, it is more abundant, but still less rich. It has also been remarked, that the morning's milk is of better quality than that obtained in the evening.

Dimensions Necessary for Health in Living or Sleeping Apartments.—No living, sleeping, nor working room should contain less than 140 superficial feet at the bottom, nor should be less than eight feet high, with at least one window, opening at the top, and if possible, it should not be without an open fireplace, or an opening for ventilation near the floor.

AGRICULTURE OF THE CHINESE.—No. 7.

Cultivation of Cotton.—The Nanking cotton plant (*Gossypium herbaceum*), or "Mie-wha" of the northern Chinese, is a branching annual, growing from one to three or four feet in height, according to the richness of the soil, and flowering from August to October. The flowers are of a dingy yellow color, and, like those of the hibiscus, or malva, which belong to the same tribe, remain expanded only for a few hours, in which time they perform the part allotted to them by nature, and then shrivel up and soon decay. At this stage, the seed pod begins to swell rapidly, and when ripe, the outer coating bursts and exposes the pure white cotton in which the seeds lie imbedded.

The yellow cotton, from which the beautiful Nanking cloth is manufactured, is called "Tze mi wha" by the Chinese, and differs but slightly in its structure and general appearance from the kind just noticed. I have often compared them in the cotton fields where they were growing, and although the yellow variety has a more stunted habit than the other, it has no characters which constitute a distinct species. It is merely an accidental variety, and although its seeds may generally produce the same kind, they doubtless frequently yield the white variety, and *vice versâ*. Hence, specimens of the yellow cotton are frequently found growing amongst the white in the immediate vicinity of Shanghae; and again a few miles northward, in fields near the city of Poushan, on the banks of the Yang-tse-kiang, where the yellow cotton abounds.

The Nanking cotton is chiefly cultivated in the level ground around Shanghae, where it forms the staple summer production of the country. This district, which is part of the great plain of the Yang-tse-kiang, although flat, is yet several feet above the level of the water in the rivers and canals and is consequently much better fitted for cotton cultivation than those flat rice districts in various parts of the country (such for example as the plain of Ning-po), where the ground is either wet and marshy, or liable at times, to be completely overflowed. Some fields in this district are, of course, low and marshy, and these are cultivated with rice instead of cotton, and regularly flooded by the water wheel during the period of growth. Although the cotton land is generally flat, so much so, indeed, that no hills can be seen from the tops of the houses in the city of Shanghae, it has nevertheless a pleasing and undulated appearance, and taken as a whole, it is perhaps the most fertile agricultural district in the world. The soil is a strong rich loam, capable of yielding immense crops year after year, although it receives but a small portion of manure.

The manure applied to the cotton lands of the Chinese, is doubtless peculiarly well fitted for this kind of crop. It is obtained from the canals, ponds, and ditches which intersect the country in every direction, and consists of mud which has been formed partly by the decay of long grass, reeds, and succulent water plants, and partly by the surface soil which has been washed down from the higher ground by the heavy rains. Every agricultural operation in China seems to be done with the greatest regularity, at certain stated times, which experience has proved the best, and in nothing is this

more apparent than in the manuring of the cotton lands. Early in April, the agricultural laborers, all over the country, are seen busily employed in cleaning these ponds and ditches. The water is first of all partly drawn off, and then the mud is thrown up on the adjoining land to dry, where it remains for a few days until all the superfluous water is drained out of it, and is then conveyed away and spread over the cotton fields. Previous to this, the land has been prepared for its reception, having been either plowed up with the small buffalo plow, in common use in the country, and then broken and pulverized by the three-pronged hoe, or, in those instances where the farms are small and cannot boast of a buffalo and plow, it is loosened and broken up entirely by manual labor. When the mud is first spread over the land, it is, of course, hard or cloggy, but the first showers soon mix it with the surface soil, and the whole becomes pulverized, and it is then ready for the reception of the cotton seed. Road scrapings and burnt rubbish are saved up with care, and used for the same purpose and in the same manner.

A considerable portion of the cotton lands either lie fallow during the winter months, or are planted with those crops which are ready for gathering prior to the sowing of the cotton seed. Frequently, however, two crops are found growing in the field at the same time. Wheat, for example, which is a winter crop, is reaped in the Shanghae district generally about the end of May, while the proper time for putting in the cotton seed is the beginning of that month or the end of April. In order, therefore, to have cotton on the wheat lands, the Chinese sow its seeds at the usual time amongst the wheat, and when the latter is reaped, the former is several inches above ground, and ready to grow with vigor when it is more fully exposed to the influence of sun and air. The Shanghae season; that is, from the late spring frosts to those in autumn, is barely long enough for the production and ripening of the cotton, as it is easily injured by frost, and the Chinese farmer is thus obliged, in order to gain time and obtain two crops from his ground in one year, to sow its seeds before the winter crop is ready to be removed from the ground. When it is possible to have the first crop entirely removed before the cotton is sown, it is much prefered, as the land can then be well worked and properly manured, neither of which can otherwise be done. The method of sowing one crop before the preceding one is ripe and removed from the land, is very common in this part of the country; and even in autumn, before the cotton stalks are taken out of the ground, other seeds are frequently seen germinating and ready to take the place of the more tender crop.

In the end of April and beginning of May, the land having been prepared in the manner just described, the cotton seeds are carried in baskets to the fields, and the sowing commences. They are generally sown broadcast; that is, scattered regularly over the surface of the ground, and then the laborers go over the whole surface with their feet and tread them carefully in. This not only embeds the seeds, but also acts like a roller to break and pulverize the soil. Germination soon commences, the seeds rooting first in the manure, which had been scattered over the surface of the land. In some cases the seed, instead of being sown broadcast, is sown in drills, or patches, but this mode is less common than the other. The rains, that always fall copiously at the change of the monsoon which takes place at this season of the year, warm and moisten the earth, and the seeds swell, and vegetation progresses with wonderful rapidity. Many of the operations in Chinese agriculture are regulated by the change of the monsoon. The farmer knows from experience, that, when the winds, which have been blowing from the north and east for the last seven months, change to the south and west, the atmosphere will be highly charged with electric fluid, and the clouds will daily rain and refresh his crops.

The cotton fields are carefully tended during the summer months. The plants are thinned where they have been sown too thickly, the earth is loosened amongst the roots, and the ground hoed and kept free from weeds. If the season is favorable, immense crops are obtained, owing to the fertility of the soil, but if the weather happens to be unusually dry from June to August, the crop receives a check which it never entirely recovers, even although the ground, after that period, should be moistened by frequent showers.

The cotton plant produces its flowers in succession from August to the end of October, but sometimes, when the autumn is mild, blooms are produced even up to November, when the cold nights generally nip the buds, and prevent them from forming seed. In the autumn of 1844, this happened on the night of the 28th of October, when the thermometer sunk to the freezing point, and then ice was found on the sides of the canals and ponds.

As the pods are bursting every day, it is necessary to have them gathered with great regularity, otherwise they fall upon the ground and the cotton gets dirty, which of course reduces its value in the market. Little bands of the Chinese are now seen in the afternoon, in every field, gathering the ripe cotton and carrying it home to the houses of the farmers. As the farms are generally small, they are worked almost entirely by the farmer and his family, consisting sometimes of three or even four generations, including the old grey-haired grandfather or great grand father, who has seen the crops of four-score years gathered into his barns. Every member of these family groups has a certain degree of interest in his employment; the harvest is their own, and the more productive it is, the greater number of comforts they will be able to afford. Of course there are many cotton farms of larger size, where laborers are employed in addition to the farmer's family, but by far the greater number are small and worked in the way I have just described. It is no unusual sight to see the family goats, too, doing their share of the work. Several of these animals are kept on almost every farm, where they are, of course, great favorites with the children, and often follow them to the cotton fields. Although the children with their little hands can gather the cotton as well as their elders, they are not strong enough to carry it about with them, and it is amusing to see their favorites, the goats, with bags slung across their backs, receiving the

deposits of cotton, and bearing it home to the houses, evidently aware that they, too, are working for the general good.

However fine the crop may be, the Chinese are never sure of it until it is actually gathered in. Much depends upon a dry autumn; for, if the weather is wet after the pods begin to burst, they drop amongst the muddy soil, and are consequently much injured, if not completely destroyed. When the cotton reaches the farmyard, it is daily spread out on hurdles raised about four feet from the ground, and fully exposed to the sun. As the object is to get rid of all the moisture, it is of course only put out in fine weather, and is always taken into the house, or barn, in the evening. When perfectly dry, the process of separating it from the seeds commences. This is done by the well-known wheel with two rollers, which, when turned round, draws or sucks in the cotton, and rejects the seeds. It is a simple and beautiful contrivance, and answers well the end for which it is designed. The cotton is now sent to market, and a portion of the seeds are reserved for the next year's crop.

Early in the fine autumnal mornings, the roads leading into Shanghae are crowded with bands of coolies from the cotton farms, each with his bamboo across his shoulders and a large sack of cotton slung on each end. With these, they hurry into the town, for the purpose of disposing of them to the merchants, who have numerous warehouses from which they send the cotton to the other provinces of the empire. These coolies, or small farmers (for many of them bring their own produce to market themselves), are very independent in their dealings. Having reached the first warehouse, the cotton is exposed to the view of the merchant, who is asked what price he intends to give for that particular quality; and should the sum offered be below the owner's expectations, he immediately shoulders his load and walks away to another merchant. At this season, it is almost impossible to get along the streets near the sides of the river where the cotton warehouses are, owing to the large quantities of this commodity which are daily brought in from the country. It is bought up by the large cotton merchants, who empty it out in their warehouses, and then repack it in a neat compact manner, before it is conveyed on board the junks.

Before the cotton is converted into thread for the purpose of weaving, it is cleaned and freed from knots by the well-known process common in India. This is done by an elastic bow, the string of which being passed under a portion of the cotton, placed on a table, throws it into the air by the vibration which is kept up by the workman, and separates the fibre without at all breaking or injuring it. At the same time, the wind, caused by the sudden vibrations, carries off the dust and other impurities. After this process, the Chinese cotton is particularly pure and soft, and is considered by good judges not to be surpassed by any in the world. It is much superior to that imported into China from Hindostan, and always commands a higher price in the Chinese market.

Every small farmer, or cottager, reserves a portion of the produce of his fields for the wants of his own family. This, the female members clean, spin, and weave at home. In every cottage throughout this district the traveller meets with the spinning wheel and the small hand loom, which used to be common in our own country in days of yore, but which have now given way to machinery. These looms are plied by the wives and daughters, who are sometimes assisted by the old men, or young boys, who are unfit for the labors of the field. Where the families are numerous and industrious, a much greater quantity of cloth is woven than is required for their own wants, and in this case the surplus is taken to Shanghae and the adjacent towns for sale.

When the last crops are gathered from the cotton fields, the stalks are carried home for fuel. Thus every part of the crop is turned to account; the cotton itself clothes them, and affords them the means of supplying themselves with all the necessaries of life; the stalks boil their frugal meals; and the ashes even (the remains of all), are strewed over their fields for the purposes of manure. But even before this takes place, the system I have already noticed, of sowing and planting fresh crops before the removal of those which occupy the land, is already in progress. Clover, beans, and other vegetables are frequently above ground in the cotton fields before the stalks of the latter are removed. Thus, the Chinese, in the northern provinces, lengthen by every means, in their power, the period of growth, and gain as much as they possibly can from the fertility of their land. The reader must bear in mind, however, that the soil of this district is a rich, deep loam, which is capable of yielding many crops in succession without the aid of a particle of manure. Nature has showered her bounties on the inhabitants of this part of the Chinese empire with no sparing hand; the soil is not only the most fertile in China, but the climate is capable of rearing and bringing to perfection many of the productions of the tropics, as well as the whole of those found in all the temperate regions of the globe.

VALUE OF PEAT ASHES AS A MANURE.—Peat ashes, or those made of common turf, or sod, are of much greater value than is generally supposed; though the common practice of allowing the peat to burn until it becomes a heap of white or reddish ashes, is both wasteful and erroneous. The fire should be carefully attended to by starting it first with a few dry sticks, weeds, or straw, and then adding fresh dried peat, or sod, so that the heap is only slightly charred, which completely decomposes the acids present, and the whole will be converted into a most useful manure.

UTILITY OF WASPS AND HORNETS.—Reaumer states that the French butchers are glad to have wasps about their stalls for the purpose of driving away the blow flies. In our own country, both wasps and hornets do great service in destroying vast numbers of tormenting flies and moths.

A NEW FERTILIZING COMPOUND FOR GRASS LANDS.—Muriate of ammonia and common salt, mixed in equal proportions, and applied at the rate of 400 or 500 lbs. per acre, have produced the best results.

LETTERS OF R L. ALLEN.—No. 5.

Domestic Stock in the South.—Throughout a large portion of the southern valley of the Mississippi, and the country east and west of it, little attention is paid to the breeding and rearing of domestic animals. There are several substantial reasons for this, and some *causes* which are not reasons.

Where sugar can be made a profitable crop, there is no doubt of the propriety of keeping the fields, and force, and capital employed in this object, to the exclusion of all stock breeding, excepting such cattle, sheep, and swine, as can be conveniently reared on the premises, and are necessary for the supply to the plantation in working oxen, milch cows, wool, and fresh meat. Such can find an ample range in the uninclosed grounds in the rear of the cultivated fields, which are generally suited to their thrift; or when wanted nearer home, they have cleared inclosures that may be stocked with grass or other green forage. By a little attention to this object, a large amount of money may be saved, annually, to the plantation, and the necessaries or luxuries afforded by the domestic herds, will be always within reach. Oxen may be used for a part of the season, with decided economy and advantage; but generally, mules are the only reliable sources for brute labor. These cannot be so advantageously reared on the plantation, as in the more northern states, Tennessee, Kentucky, Ohio, &c.

The same observations hold true with regard to the cotton planters, located on the deltal lands of the Mississippi and its tributaries, below latitude about 36°. Cotton, on such lands, is not only a remunerating crop, but the temperature, and the low swampy lands, which abound here, are not favorable to that full and vigorous development of the animal system, which is essential to the highest thrift, and the perpetuation of a prolific and hardy progeny. Such, at least, is my opinion, and though many may be disposed to dissent, and cite numerous examples partially refuting the position, I yet believe it to be substantially true as a general principle.

The high and rolling lands, reaching even as low as the gulf coast, are not liable to these objections, except with some limitations. Cattle thrive comparatively well here, when properly acclimated; and there are many descendants of the ancient Creole stock, the indiscriminate mixture of the early Spanish and French importations, which show much substance and stamina. But the northern and western cattle, several fine specimens of which I have seen here, are subject to numerous diseases, and many of these prove fatal the first season. How far these difficulties to the improvement of the race, by the introduction of choice foreign stock, can be obviated, remains to be seen. Peculiar care and attention may remove or mitigate some, but there are probably others which will bid defiance to human skill.

The native cattle exhibit some odd specimens of bovine organization. They illustrate, in a peculiar manner, the operation of those high-sounding phrases, "liberty, equality, and fraternity," which have recently become quite the rage across the water. They are mostly dun, speckled, black, brown, or marked with large patches of black, or dark colors, and white; and sometimes are of that pied, or mealy color denominated *calico*, or *pumpkin and milk*. They are of all sizes, shapes and features; some very trim and well made, while others are big-headed, bull-necked, sway-backed, and cat-hammed. I have seen here what might have stood for the exact original, in shape and feature, of the supposed caricature, illustrated in Vol. i. page 331 of the Agriculturist. With increased size, many of the cows would not prove bad specimens of the ox, and they might be judiciously applied to his duty, as they are certainly unfit for any other. Herds of these animals, kept in the suburbs of this city, numbering 50 to 60, would hardly furnish as much milk, as many I have seen in the north of 10 or 12. Some of them yield scarcely more than a large goat, though the milk is richer than where it is more abundant.

Cattle are raised in great numbers on the Opelousas prairies, west of this place. Some proprietors number as high as 5,000 in a herd, which roam over these wild meadows with even less restraint than did those of Abraham and the patriarchs. They depend on the season and climate alone for their food and shelter, and, consequently, like other nomadic tribes, frequently suffer great hardships and fatalities. Although they afford ample safeguards against want, yet they are seldom the means of pecuniary gain to their owners. They are entirely within the control of the latter, whenever they choose to exercise it, owing to their habitual skill in this wild herdsmanship. It is the pride and glory of these border Rob Roys, to throw the lasso with that skill and accuracy which will unerringly secure the object sought. They not only single out the particular animal they wish to secure, but it is a point of honor with them to secure him in the precise manner they previously indicate, and at will, attach the lasso to the horn, or either leg, when he is easily thrown and secured. If some sturdy bullock, however, get the weather gage of the huntsmen, or contrive to hold the long end of the lever, the unlucky Nimrod will suffer himself to be trailed through mud and mire to the annihilation of all his dress, and no little hazard of his bones, rather than suffer defeat.

The blood horse has been reared here, even upon the low lands, and has proved himself superior both in speed and bottom; but his parents were imported, and it yet remains to be proved how far he will retain these traits when bred on the deltal lands for successive generations. With this exception, there is very little attention devoted to the rearing of horses. Most of the serviceable animals, both in the city and country, are imported from the north and west. The remainder are mostly such tackies as are bred at hap-hazard by the Creoles, from anything within their reach, and apparently, from such as are fit for nothing else. Many of these are descended from the wild horses, or have been caught themselves from the hordes abounding on the Texan prairies. But the very fact of their capture proclaims their inferiority, as the mode of catching them, by pursuing with the ordinary subjected beast, shows them to be of very inferior mettle. When taken, as is sometimes done by inclosing them among the precipices surrounding some favorite watering place, choice animals

may be secured; but the valuable horses thus captured, are usually sold to such as place a high value on them, and the blood of their progeny is not permitted to flow among the plebeian veins of the common herds.

There is the same diversity in shape, color, and characteristics among the native horses of this region, as among the cattle. They are indifferently broken, and have a shuffling, scrambling kind of pace, or a short, scattering canter, which soon pumps out the little wind they have. Our worthy schepens of this city, permit the largest liberty in the exercise of horse flesh within their precincts, and the consequence is, numerous exhibitions of solitary scrub racing, where the diminutive quadrupeds scamper over the pavements at the top of their speed, which after all, is so moderate as to be attended with little danger to pedestrians.

Of swine, I have seen few here. Some of these are very good, but there is no want of such as are otherwise. They are reared almost entirely for fresh meat, as the climate opposes an effectual barrier to curing it with safety. Could the meat-pickling apparatus be perfected, so as to be successfully applied here, it would save immense sums to the planters, which they are now obliged to expend for their supplies from abroad.

Sheep abound on most of the plantations, to the extent, at least, of furnishing an ample supply of fresh mutton. They are usually large, hardy, coarse-woolled animals, nearly identical in appearance, with the northern sheep previous to their improvement by the introduction of the Merino and best English sheep. They seem to thrive well, on the luxuriant white clovers, and other pastures which abound here, and yield a fine, though never very fat, carcass of excellent mutton.

New Orleans, April 17th, 1848.

CHEESE MAKING.

I HAVE heard a great deal about the value of prairie grass for butter and cheese. And yet I heard a Hamburgh friend of mine say, a few days ago, that he had engaged to send all his cheese this season to Chicago, at a pretty round price. Why is this? If the grass is really good for anything, in that region, why is it that cheese is not made there by the million? Surely it is not an art very hard to learn. If the pages of the American Agriculturist alone were carefully examined, I think that directions enough might be found to enable any person to make a good cheese. In fact the valuable information given in this publication, at p. 233, vol. vi. might alone be sufficient, and worth ten times the cost of the whole set of this paper.

How cheap knowledge is offered to the million now-a-days. And in no department of rural economy is the need of increased knowledge more apparent than in cheese making. SOLON ROBINSON.

Crown Point, Lake C. H., Ia., March, 1848.

IMPROVEMENT OF GUANO.—If the farmer possess a genuine sample of Peruvian guano, he can much improve its quality by the addition of a little plaster of Paris (gypsum), or powdered charcoal, both of which substances have the property of absorbing free ammoniacal gas.

HOT WATER FOR TREES.

IN the April number of your paper, I noticed a remark on the experiment of pouring hot ley around the roots of a peach tree, and the good effects that followed. To many of your readers this must seem a *fatal* remedy, and have a place assigned to it with the wild eccentricities of the age; but, as to myself, I am sanguine in the belief, that, if it has not produced the good result alluded to, it would do so with proper and timely application; because, it is known now that ley is an excellent wash for trees, cleansing them from external insects, and causing the bark to assume a young and vigorous appearance. I think so, because I have heard of the good effects of scalding water poured upon the ground around trees. I am more than all confident that truth rests in the matter, from the fact that I have tried a somewhat similar experiment with perfect success.

The *particulars* in my own case are as follows:—Some years ago, when shade trees were not so common as they now are (I wish for the comfort of the many that they were more common at the present time), I happened to be in the garden of a friend about the time of the expanding of the leaves, and saw in one of the borders a few locusts of from two to four feet high, which, as he said, he was going to eradicate from his grounds, simply because, as soon as they attained a certain size, they were destroyed by the borer, and then the roots threw up a multitude of shoots in all directions, and caused him much trouble, as well as vexation of spirit. With permission I took up several of these shoots, though he forewarned me of labor lost, and transferred them to my grounds. Probably, I brought the rudiments of the borer with them. At any rate, they were there in such numbers, that their gnawings almost made me gnaw with rage. Actuated, no doubt, by a spirit somewhat congenial to that of the old lady, when she concluded to forestall the deadly workings of the peach worm, I boiled water in a tea kettle, and poured it *boiling* hot from the spout carefully over the trunks of these young trees, taking due care, where I could, to fill every worm hole. The result was, I did not kill one tree; but the borers were all killed, or ran away—I do not know which. None have ever reported themselves as wounded—none ready for service, unless, indeed, it were an occasional fugitive at the extremity of some unfortunate branch. But the trunks have never been troubled since, and those trees, now assuming the venerable appearance of age, have rewarded me many times by their fragrant flowers and beautiful foliage for the little vexation I endured and the scalding water it required. Why may not the peach worm be ousted in the same way?

Since I am upon the locust, the inquiry occurs to me why is not this tree, so ornamental for shade, so rapid of growth, and so valuable for timber, more generally cultivated? Twenty years, in New England, as cold as her climate and as hard as her soil are, give it a good degree of perfection. Farther south, a less period will no doubt give it growth enough to render it valuable for timber or for fuel. But if cultivators would succeed well with it in regions where the borer infests it, I should say, avoid pruning. In my own experience I attribute the non-recurrence of the borer to the fact, that I let

all the branches grow; and under the weight of summer leaves, they completely shade the trunks, keep them cool, and it may be, in this way, prevent the return of their deadly foe. WM. BACON.

Richmond, Mass., April, 1848.

HOW TO BREAK A COLT—A TRUE STORY.

"GEORGE," said a father to his son, "that stout, four-year-old colt of ours has thrown off every one who has dared get on his back, and the man I last employed, says it is quite impossible to do anything with him. So you may sell him for what you can get, taking good care to state these facts."

The next day, George took the colt and led him into a soft, spongy meadow, and suddenly sprang on his back, upon which, he reared up, plunged, kicked, jumped, sprang forward, then sideways, sinking into the mud over his fetlocks, and sometimes up to his knees and gambrels, and when he found that he could not succeed in throwing his rider, he stopped and shook himself like a dog after coming out of the water. This last performance was a poser for George; but like the fellow who signed the temperance pledge, he "stuck to it," until the colt started for the road, when, on he went, full speed, with his mouth wide open, running until he became quite exhausted. Shortly after this, he put him about, walked him home, rubbed him dry, gave him a little green grass out of his hand, with some water, and ever afterwards, a better horse was never backed. A TRAVELLER.

REVIEW OF MARCH NO. OF THE AGRICULTURIST.

Cultivation of Melons.—Any one can raise melons, if he has the kind of soil described by you, as most suitable. But can you give directions that will ensure a good crop of melons upon a strong clayey soil? [Yes. Make a mound of sand, or light gravel, on top of the clayey soil, five feet wide at the base, two feet wide at the apex, and one or two feet high; which may be enriched with any kind of manure most convenient to be got. If sand, or light gravel, is not to be had, then early in the fall, mound up the lightest part of the top of the soil you can find, and enrich this with horse manure, guano, poudrette, and the leaves of trees. Horse manure is, perhaps, the best, and one of the most lasting fertilizers that can be used in a stiff, clayey soil, as it pulverizes and lightens it in a very superior degree. In this manner, we have been uniformly successful in growing the finest kinds of melons on a cold, stiff, clayey soil. A mound of sods, as you propose, is an excellent plan, and would probably be rich enough without manure.] My own recommendation to those who have such a soil, would be to raise melons upon an inverted Timothy sod. If anybody can give a better one, let him speak, and promote the cultivation of this most excellent and health-promoting luxury. Let every farmer cultivate melons, one of which is worth a bushel of nasty cucumbers.

Race between Eclipse and Sir Henry.—I have nothing to say against this interesting article, not even, that the room it occupies, might have been better filled with matter more directly appertaining to agriculture; because, I believe every agricultural paper, in order to be useful, must fill a portion of its pages with matter more pleasing to the general reader, than dry essays upon this subject. But I must say, that I look upon modern horse racing, as anything but promotive of the great farming interest. I do think that breeding from the present racing stock of this country, will deteriorate the breed, and render it unfit for all farm purposes. I greatly prefer to see such horses encouraged among the farmers, as the Cleveland Bay, Messenger, Bellfounder, or Morgan horse, than a hundred others that I could name, which have nothing to recommend them, except that their sires once won in a race. [In the main, we agree with you in these observations; though where a thoroughbred is *stout enough*, and of the *proper conformation*, we should always prefer him for a stock horse. Imported Messenger, and some others we could mention, were thoroughbreds; yet it is to these horses that America traces the blood of her best road stock of the present day—a stock that we think unrivalled the world over.]

How to Render Night Soil Inodorous.—Nothing can be better than the burnt earth and fine coal, left from the burning of a common wood coal pit, which is often procurable in the country, at no other cost than the hauling. Spent tan bark, will also answer. How easy to keep one of these articles on hand, and thereby totally prevent the intolerable smell often attendant upon farm houses. [Those who cannot conveniently obtain burnt earth, or charcoal dust, can *deodorize* their night soil by mixing with any of the following substances:—Wood ashes, or plaster of Paris; the sulphates of iron (copperas), lead, copper, zinc, or tin; the chlorides of iron, manganese, copper, lead, zinc, tin, sodium (common salt), or lime; the nitrates of lead, copper, zinc, or tin; pyroligneous acid; pyrolignite of iron; or the mother waters arising from the manufacture of any of the before-enumerated substances; coal tar, or schistous and bituminous extracts. Of these, the preference is given to the sulphates and chlorides of iron, and the nitrate of lead.]

Directions for Sacking Wool.—This is merely a direction as to the manner of performing the work. But as it is intended for new beginners in the business, it should also have stated, that the wool should be sorted into three parcels, as to fineness of fleeces, as near as possible, so that the fair quality of the whole may be judged, as well by examining one end of the sack, as the whole.

Keeping worthless Dogs.—"Let him that is guiltless, throw the first stone." Nobody will be hit.

Prepared Guano.—"Let all trades live." And among the rest, the humbug trade.

Letters of R. L. Allen, No. 2.—Mr. A. says that he believes the readers of this paper, in the south, are desirous of improvement in the manner which agricultural work is carried on in the north. No doubt of it. But, unfortunately, not one in a hundred is a reader of this, or any other agricultural paper. And the question is, how are the other ninety-nine to be induced to read. For my part, I cannot devise any plan; and, therefore, I see no way to prevent so many ruined plantations staring us in the face, throughout the whole of the southern states. They don't read, and they don't know how to maintain the fertility of the soil. It must wear out, and be

abandoned for a new location, in the states farther west, which, in turn, will be worn out, until the tide has reached the Pacific and turned back.

Employment.—It is not because the "robust farmer" is employed, that he "bemoans his lot;" but because, in a great majority of cases, he is compelled to continued, incessant toil, for a bare support of himself and family, while he sees, not only "his wealthy neighbor," "surrounded with more splendor," but a vast number of idlers, without any visible means of support, setting a mischievous example to his own children, who are induced to think that the only true source of happiness, is in having *no* employment. I agree with the writer, that employment promotes happiness, but it is hard to convince the laboring man that such is the fact.

A Cheap, Portable Fence.—I do not think that this kind of fence is so cheap, or portable, as the "ladder fence." If I were to use boards for a fence, as hurdles, I would nail each panel upon battens, and put them up without posts, by setting them crooked, and fastening the panels together with hooks. For one, I am free to say, that I do not think that Mr. Hardeman's plan is so good as several others that I have seen.

Facts in Farming.—Why will ye not hearken unto facts like these, and profit thereby?

Fences a Direct Tax to the Farmer.—I am glad to see that I have got one other champion in this good cause. This article of our old friend Mr. Robinson, is a most conclusive one. Let me repeat, "*Farmers, think of it.*" I cannot say more.

Galloway Cattle.—What *do* we grow horns for? and if the "hornless cattle should be bred in remote districts," why should they not be bred in near districts? Cattle horns never yet sold for enough to pay the cost of growing, to say nothing about the mischief they do. It is the universal opinion among all who have ever paid attention to the subject, that polled cattle are more healthy, and more easily raised, than those with horns. As it is not fashionable, nor useful, in these latter days, to "take a horn," and as we have quit the use of "horn spoons," I vote for quitting the growing of such a useless appendage upon the heads of our oxen, bulls, and cows.

Seasoning and Preserving Timber.—If the sills of a mile of railroad can be rendered almost as imperishable as stone, for $500, it is passing strange that the process is not universally adopted. So of all bridge timber, as well as sills of buildings, &c. Pray, let us hear more of this very important subject.

Wool Growing in Texas.—Mr. Marsh says that he commenced business with "twelve Mexican ewes and one buck." Now I want to know what sort of sheep these Mexicans are? If they are as much of a mongrel breed as the people that I have seen at Tampico, Vera Cruz, and other Mexican ports, I want none of them. But perhaps they may be of the pure old Castilian stock, and well worth the attention of gentlemen in other southern states. Will Mr. Marsh give us more details? The increase of the flock has certainly been such as astonishes us way off here among the rocks and hills, ice and snow. Do the ewes have two lambs a year? For in no other way can I make out how 12 could increase to about 300 in five years.

Technical Words Complained of.—This complaint arises from a very great fault in nearly all the schools of the country. *Children are seldom taught the meaning of words.* Whole pages are committed to memory, but ten to one, if the child is ever asked if he fully understands the meaning of the words repeated. Until there is a radical change in the system of instruction in common schools, it would be useless for any competent person to furnish the articles recommended by the editor, giving explanations of these "hard words." For few, if any teachers, would use the paper in school. I have repeatedly tried to get agricultural papers introduced into our district school, as reading books, where every child's father was a farmer; but found so much opposition to it, that I had to give it up. I still hope for better things; and that farmers will yet see the necessity of educating their children in such a manner, that, when they read the names of substances which should occur in every day conversation relative to farming, they will not pass them over as unknown, and to them unmeaning "hard words." REVIEWER.

CISTERNS.

As to cisterns in your country, and in the far west, alluded to by Reviewer, at page 375, I cannot say; but I do know that a cistern in many parts of Mississippi, will save in physic and doctors' bills, in one year, the whole price.

I believe I speak in due bounds, when I say, there are some families who have not one third the sickness now, that they had when using other water. My cisterns are sixteen feet deep, plastered on the clay walls; one of them has a brick arch, with full three feet of earth upon it, to make the earth around it level.

I wish Reviewer could persuade every one to abolish tea and coffee. I now think many are ruined by them; I myself, for one, no doubt, am a fair specimen of what tobacco, coffee, and tea can do. May he live until he is as grey as a rat, and as old as Methuselah, if he can only be always happy, cheerful, and useful.

The peach-tree borer, I hear people talk about in these parts; but really, I do not see any use in this. * * * * I have now here, of standards, full 1,200 trees, and some 4,000 more young trees, and I have no sort of thought that I will lose one tree in a year from the borer. Land that is rolling enough to take off surplus water, well cultivated, rich, and with proper ingredients, lime, especially, will grow peach trees in this latitude—worm or no worm. I have cut the worm out, four feet above the earth, and I have trees here that are 15 to 17 years old. I can show trees in this neighborhood, neglected all the time, that bore fruit 17 years ago. The time taken up in catching the flea to poison him, would be better made use of in preparing the earth to grow the tree vigorously.

We all know that the cotton plant is subject to the cotton louse all the year, the growing part, of course. But who ever complained of the louse when the season was warm, and the plant growing?

Cotton planted too early, becomes stunted, and the food required by the lice, destroys the plant. Do not worms injure a puny, half-raised baby? And does not a hearty, robust babe keep hearty in spite of the worms? I believe one half the *negroes at least*, in this country, have worms, yet none are injured, unless a dirt eater, or an old ague subject. I have known hearty persons pass worms.

I am told that sulphur inserted into a small hole, and then plugged up, will certainly drive every caterpillar off. Is it so? [No.]

M. W. PHILIPS.

Edwards, Miss., April, 1848.

MANUFACTURE OF NAVY BUTTER FOR FOREIGN STATIONS.

THE manufacture of butter for the navy of the United States on foreign stations, requiring 60,000 lbs. annually, having been brought to the notice of the Executive Committee of the New York State Agricultural Society, they deem it of sufficient importance to our dairymen to investigate the subject. In the proposals issued by the bureau of provisions and clothing of the navy department, in describing the quality of butter to be delivered, it is said, "the butter must be of the description, quality, and manufacture of the present navy butter, made in the mode of '*Irish rose butter*.' The milk must be thoroughly worked out, and the butter cleansed of all impurities, and extraneous substances, and be put up in seasoned, white-oak firkins, containing about 80 lbs. each, well and strongly hooped, so as to be perfectly air and pickle tight. Persons offering proposals are required to produce satisfactory evidence that their butter will stand the test of tropical climates, and preserve their sweet and wholesome qualities for years, &c."

On inquiry, it was ascertained that the butter, which has been furnished under this contract, has usually been what is called Orange county butter; and the gentleman who has special charge of this department is of opinion that *no butter made out of Orange county* will resist the action of tropical climates, and preserve its qualities for years. From the statement in the proposals that the butter was to be made "in the mode of *Irish rose butter*," it was deemed important to ascertain how Irish rose butter was made (if there was any such butter), of which the committee were entirely uninformed. The secretary opened a correspondence with gentlemen in Liverpool and Ireland in relation to this subject, and a portion of the result of the correspondence is hereunto annexed.

The question, *whether all the butter to be used on distant foreign voyages*, and on foreign stations, by the military and commercial marine, *must be made in the county of Orange*, becomes more and more important, as our commerce annually extends. It is doubtless true that the soil and climate have an influence upon the quality of the butter. The grasses in particular localities are better adapted to the production of a superior article than in others; but it has been supposed that the region peculiarly adapted to the production of good butter in this state, instead of being confined to a *single county*, extends to quite a number of counties; and it is not believed that there is any such peculiarity connected with Orange county as to give it pre-eminence over other counties in the Catskill Mountain range, and some other localities in the state.

It has been the object of the society to ascertain what localities are best adapted to the dairy, and for that purpose liberal premiums have been offered, requiring a minute and careful detail of all the circumstances connected with the soil, climate, water, grasses, &c., so that it might be ascertained what locality is best suited to the dairy; and it is hoped that such results will be arrived at as will reasonably demonstrate all that is desired.

In the geological survey of this state, particular attention was given to this subject, by one of the geologists, Professor Mather, of the first geological district, which included the counties of Washington, Saratoga, Schenectady, Scoharie, and Delaware, and all east and south of this line in the state. In speaking of the agricultural character of the Catskill division, he says,

"This country is admirably adapted for grazing, both for cattle and sheep, and the fine sweet grass and cold springs, offer as great facilities for making excellent butter as the world affords. A *large proportion* of the butter sold under the name of *Goshen butter*, which is celebrated for its superior qualities, is made in the mountainous region of *Delaware, Sullivan, Ulster, and Greene counties*."

There are several other counties in this state, where butter of the very best quality is made, which has stood the test of tropical climates, and some of the butter from these counties commands as high prices as any in our markets. From their geological character we should expect this. There can be no doubt that the butter from a great number of localities in the state will prove equally serviceable as from any of the counties of the Catskill Mountain range, if the same attention is given to its manufacture as is given by the best Orange county dairywomen, and reference is made to the extracts from letters from several butter dealers in New York, which clearly establish this.

From the county of Chenango, a contract was made, in 1847, by way of experiment merely, for ten thousand pounds for the use of the navy. The butter under this contract has been delivered and inspected, and the gentleman who inspects butter for the navy, on examining and inspecting this lot, speaks of it "as excellent butter, *for Northern New York butter*, but also *speaks of the inability of any* butter to stand the test of foreign climates and time, *that was not made in Orange county*." This is the opinion fully entertained, we are assured, by all the gentlemen of the navy department who have charge of this bureau. It is of vital importance that measures be taken to correct this error, if error it be, as the opinion is honestly entertained.

By the contract which is made for the manufacture and delivery of the butter for the navy, it is provided that it "shall be made according to the most approved *Irish method*; the milk to be thoroughly worked out and the butter cleansed of all impurities, &c." Not a word in the contract about *Irish rose butter* which is prominent in the proposals for contracts. Why was this so drawn. Was it to prevent those who never heard of Irish rose butter who might otherwise have been inclined to offer proposals, not to do so, being ignorant of how *Irish rose*

butter was made?" It is presumed it must have been inserted through inadvertence on the part of the persons preparing the notices. But from whatever reason it was inserted, *its effect has been*, beyond all question, *to prevent* persons from offering proposals, who otherwise might have done so. Inquiries have been made at the rooms of the society for information as to *Irish rose butter*, but no person in this section of the state could give any information on the subject, and from the correspondence from Ireland, it seems equally difficult to give any account of it in Ireland itself. A letter from Cork, where the butter for the British navy is purchased and inspected in open market, says: "The term 'rose butter' we know not the derivation of." "There is only *one description* shipped here, and all is brought in for inspection to a public market in this city."

A correspondence was opened with Brown, Shipley & Co., of Liverpool, an extensive mercantile house engaged in the American trade, and letters have been received from them on the subject of *Irish rose butter*, and of the method of manufacturing butter for the British navy. This is manufactured chiefly in the counties of Cork, Limerick, and Kerry, in Ireland.

Extract of a letter received by the firm above referred to, from Clonmel, Ireland, dated July, 1847, answering their inquiry about Irish butter: – "We are this morning in receipt of your favor of 29th ult., and in reply, we give you all the information we can, as to how butter is manufactured in this neighborhood. Our best makers have large, airy, cool dairies, and churn twice or three times a week, which depends on the heat of the weather. Caution must be used not to allow the cream to be too long in the tubs and pans, or until it gets sour, as the butter will then be inferior and what is termed *cheesy*. The buttermilk must be well washed out of the butter, and when salted, be packed *firm* into the firkin. These, with great cleanliness, are the principal things to be looked after in the manufacture, otherwise your butter will not keep its quality. The quantity of fine salt is 3 lbs. to the firkin, containing about 65 lbs. The butter in this district is made expressly for the London and north of England markets; in the former, at certain periods of the year, it takes precedence of the Dutch. We never heard of *rose butter*, but we know one of the Waterford houses brands the best quality he ships with a rose. The navy is supplied with butter exclusively from Cork, where a larger quantity of salt is used in the manufacture, and where it is made up expressly for foreign exportation."—*Transactions, for* 1847.

SPENT TAN BARK MAY BE EMPLOYED AS A MANURE.—This substance can easily be dried and converted into charcoal, in a similar manner as recommended for charring peat. It may then be mixed with night soil, answering both the purpose of drying and rendering it fit for carriage, at the same time absorbing all the ammonia, &c. It may also be mixed with urine, or with animal manure of any kind for similar purposes. Tan bark, in an uncharred state, is of no immediate value as a manure, in consequence of the gallic and other acids it contains.

DOES WATER IN RUNNING THROUGH LEADEN PIPES BECOME POISONOUS AND UNFIT FOR USE?

IN the March number of the Agriculturist, page 101, it is stated on the authority of the "Christian Citizen," that several persons of Worcester, Mass., have suffered, during the past year, from the use of water pumped from wells through leaden pipes. I notice also that lead pipe is advertised for sale in your May and June numbers for hydrants, pumps, &c. As I am desirous to put up a water ram on my place, I wish to know whether there is any mode of preparing lead pipe, by covering, or otherwise, so as to render it secure from the danger referred to above. R.

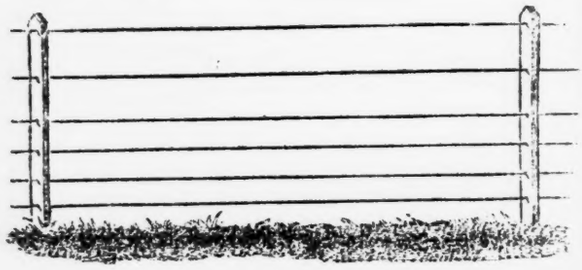
Merrimack Co., N. H. June 2d, 1848.

The poisonous nature of lead, when imbibed by man, or animals, is too well known to require a lengthened description here. For it has been proved, by direct experiment, that pure water, containing much atmospheric air, carbonic acid, and some other foreign substances, has the power of corroding it and dissolves the newly-formed oxide, and that, the longer water thus contaminated, remains in contact with the lead, more especially if the air has free access, the more lead will be dissolved, and the water, of course, will become more poisonous. The leaves of trees, and in fact, any other organic matter, in a state of decay, have a tendency, more or less, to induce the same effect. But river, well, or spring water, containing, in solution, $\frac{1}{30000}$th part of phosphate of soda, or iodide of potassium, exerts no such influence. The pipes, in contact with such water, gradually become lined with a superficial film of an insoluble salt of lead, which adheres tenaciously, and no further change takes place. Many other neutral salts act in a similar manner, among which are the carbonates, phosphates, sulphates, chlorides, and iodides; their power being in proportion to the relative insolubility of the compound which their acid is capable of forming with lead. Hence, ordinary water, which abounds in mineral salts, may be safely conducted through leaden pipes; but *distilled and rain water, or water that contains scarcely any saline matter, such as often occurs in wells, springs, streams, and lakes, in a purely granite region*, speedily corrode and dissolve a portion of lead whenever brought into contact with it. In all such cases, leaden pumps, cisterns, and pipes should be coated with tin, inside and out, which will render them perfectly secure from injurious effects.

We should have observed, that the poison of lead differs very materially from most other substances called poisonous. It is not what is denominated an active poison, and is not accompanied by any particular symptoms, except when introduced into the system in considerable quantities. On the contrary, the salts of lead may be ranked among those insidious substances, which are taken without any peculiarity of taste or smell, but which, when gradually introduced into the system, by minute quantities at a time, will eventually produce paralysis, swollen fingers and wrists, followed by that dreadful disease, termed the "painters' cholic," and finally premature death.

WIRE FENCES.

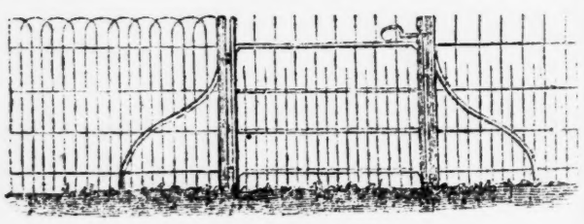
The superiority of wire fences consists in their strength and durability, lightness and appearance; adaptation to almost every situation and purpose, for which fencing is required; the facility with which they can be erected or removed; and their perfect efficiency as a barrier against cattle, horses, sheep, &c. The economy, also, of their erection, in many cases, even in the first cost, together with their durability, recommends them to general use in all situations where other fencing materials cannot conveniently be obtained; and when made of wooden, instead of iron pillars, or posts, they can often be built at about the same expense as those made entirely of wood.



Cattle or Sheep Fence.—Fig. 55.

One important property connected with these fences, and which constitutes their peculiar character, is their elasticity. They yield but little to pressure; yet, as soon as it is removed, they resume their former position without sustaining the least injury therefrom. The principle of tension renders them strong and sufficient for every pressure, or ordinary purpose, for which any fence for horses, cattle, and sheep is required. It must be some extraordinary force to injure them, to which fences are not usually liable, and even when thus accidentally broken, they can quickly and easily be repaired at a trifling cost.

Fig. 55, denotes a section of common cattle and sheep fence, with wooden uprights, or posts. Price, $1 per rod. Cost of the same, with iron posts and uprights, from $1.50 to $2 per rod.



Rabbit Fence.—Fig. 56.

Fig. 56, shows two sections of rabbit fence, with a gate, constructed entirely of iron. It will also serve the purpose of guarding against the encroachments of ducks, geese, small pigs, sheep, goats, and calves, and of confining them within proper bounds. Prices, from 75 cents to $1.50 per running foot.

An Egg Fact.—It has been stated on high authority, that clear, or unfecundated eggs (that is those produced without any connection with the cock), will keep sound longer than those that would be productive.

SUPERIORITY OF WOOL MATTRESSES.

The object of this communication is, to show that wool mattresses are the warmest, the most luxurious, the cheapest, and the most economical of any in use; that they are the healthiest for men, women, and children, of all ages and sexes; and that man recovers much sooner from fatigue, on such a bed, than on any other.

The Romans used to sleep in the day-time, and had particular rooms for that purpose, distinct from their bed chambers, where they slept at night. In Italy and some other southern countries, that practice has still been continued even up to the present day. Hence it is of the utmost importance what kind of bed they lie upon, whether it be hard or soft; for, the harder the bed, the healthier they are. In the old accounts of the court of England, there is a charge on a journey for so many bundles of clean straw for the queen's bed. Then, it was said, when men slept on straw, with a log of wood for a pillow, they were "men of iron;" but now, they sleep on bedsteads of iron, beds of feathers, and pillows of down, and often are known as "men of straw."

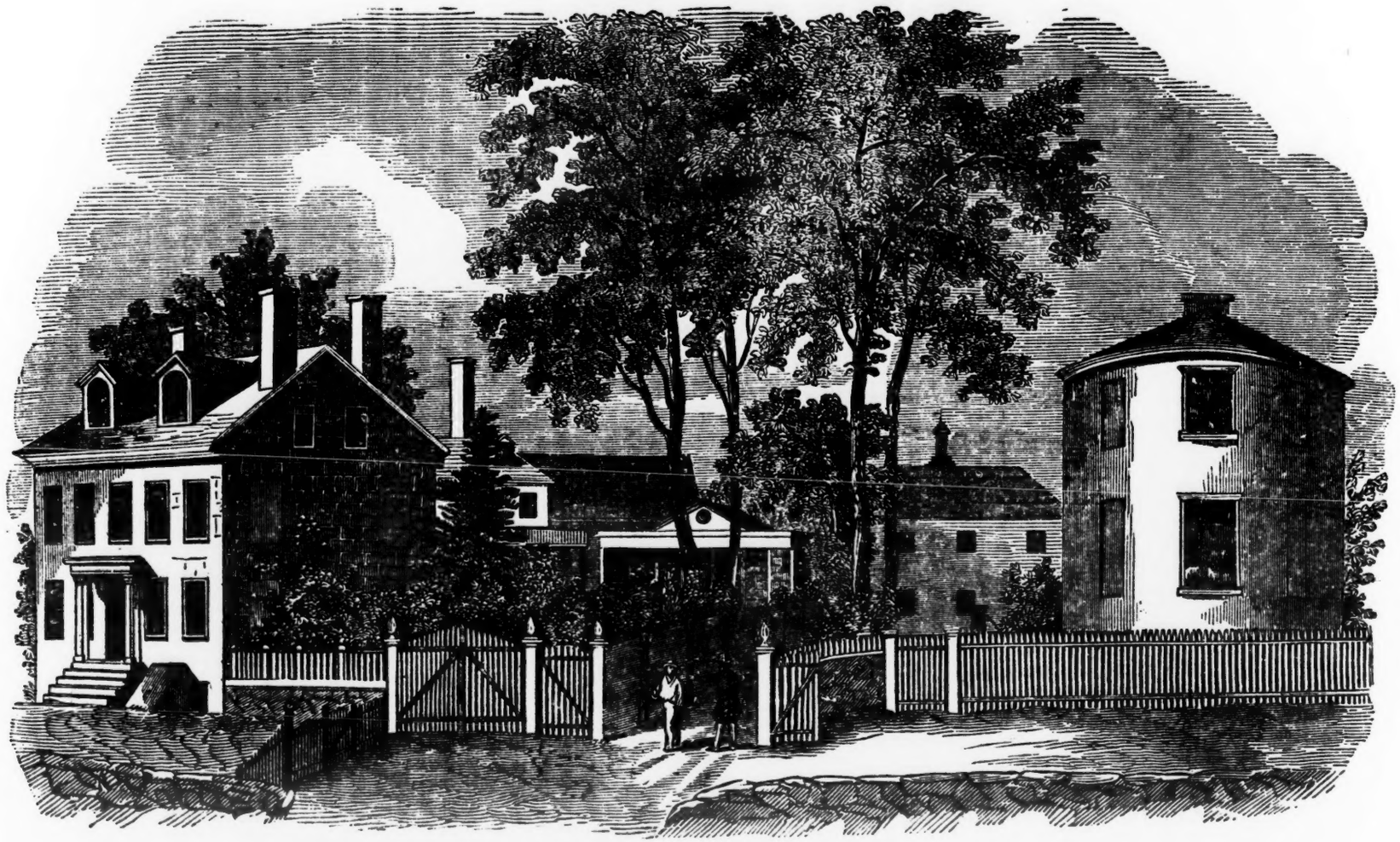
Wool mattresses are hard and firm, and at the same time, yield sufficiently to the pressure of our bodies to form an agreeable and luxurious resting place, without leaving marks on the skin, as other mattresses often do. The fibres of the wool, of which they are composed, touch each other so slightly, that heat or cold moves slowly through the interstices, and causes it to retain its temperature better than any other material.

A good healthy bed should absolutely be flat. Hence all bedsteads should have wooden laths, instead of sacking, or cords, which always give to the bed a hollow form. The best bed I ever slept on contained 60 lbs. of finely-carded wool, but its size was extra large; half that quantity will make a comfortable small bed; but if you wish to lie luxuriously, yet hard, do not stint the wool. A bed of this kind will last forever, as the covering need not be washed but once a year, when the wool should be re-carded, with a few pounds more added, and the whole will be as sweet as new.

Another object in this communication is, to show that the general adoption of wool mattresses, in this country, would increase the home consumption of our wool. Independent of this, it would benefit the health of all who would use them, to say nothing of the cleanliness, durability, and economy they would produce, in the end. Cato.

Pike Co., Mo., Feb., 1848.

Treatment of Horse Manure.—Fresh horse dung, when dried, contains about 2¾ per cent. of ammonia and other fertilizing salts; but when allowed to ferment, as it usually does in practice, it contains only about 1 per cent. of fertilizing salts, and loses besides, nearly $\frac{9}{10}$ths of its weight. This gives some idea of the waste which generally attends the practice of neglecting this kind of manure on the farm. In order to prevent this waste, it is only necessary to throw the dung into a heap, under cover, and sprinkle a few handfuls of charcoal dust or plaster of Paris among it every few days, or if it becomes heated, to mix with it a few quarts of common salt.



MOUNT-AIRY AGRICULTURAL INSTITUTE.—FIG. 57.

THIS Institution is under the superintendence of Mr. John Wilkinson, and is located at Mount Airy, Germantown, Pa., seven miles from the city of Philadelphia. It embraces the farm and buildings favorably known to the public, and recently occupied by James Gowen, Esq. See advertisement, on page 231, of the present number.

YANKEE FARMING.—No. 6.

Good people all of every sort,
Give ear unto my song;
And if you find it wondrous short,
It cannot hold you long.

Raking and Cocking.—As the weather was promising, Uncle Sim preferred to let the hay remain out one night, to sweat in the cock, before being taken into the barn. This he thought made it cure quite as green and fragrant as if it went in the same day, and rendered it much less likely to fire in the mow; nor did it by this process, require half the quantity of salt to preserve it.

To facilitate gathering the hay and to show my neighbors something new, I had brought up with me the horse rake which I had recently purchased, hitched in Mr. Doolittle's old mare to draw it, mounted Peter (his youngest son), on her back to guide her, took hold of the handles myself, and went to work. To their surprise they found it winrowed the hay quite as fast as they could do it with all their hand rakes.

Everything was going on thus cleverly, when, who should appear in the field but Aunt Nabby, at the head of the whole *posse* of our wives, to take a look at my operations; for, misdoubting the working of the rake, our hostess had invited these ladies to come and spend the afternoon with her and take tea, determining in her own mind, in case of the failure of the Sargeant's "new patent gimcrack," as she termed it, to hold them as a *corps de reserve* to help the men do up the raking. But Mrs. Doolittle had not long witnessed the beautiful evolutions of the horse rake, its clean and exact work, before doubt gave way to admiration and delight, and she exclaimed, "Massy on me, how it does roll up the hay! Who'd a guessed, now, with that 'ere old mare to draw, and our Pete to ride, and no livin' parson but the Sargeant a holdin', it would spin so. Wal, if it don't beat all natur a rakin'. I've heern a good deal about its workin', but that is nothin' at all to seein'. How it slips and slides! Why 'tis jest as easy as runnin' on glare ice; and then it turns over and over with a click clack, as reg'lar as the old wooden clock we bought so long ago of that 'ere 'cute pedlin' chap, Mr. Slick. If it was'nt our own hoss now I see there, and our own livin' boy a ridin', I never would a b'lieved my eyes; for the Sargeant holdin' and guidin' is nothin'. He, and Mr. Jones who stands laughin' there, is ollous cuttin' up some new tantrum, that nobody knows nothin' about 'cept themselves. I ax your pardon, Miss Teltrue," she added, turning round to my wife; "but you know I'm a plain woman and must speak my mind."

Here her curiosity in regard to the operations of the rake was wound up to an irrepressible pitch; and with the view of examining it more particularly, she approached so close, that as it revolved with a heavy load, an outside tooth caught the lower part of her dress, and giving a sudden turn, threw her flat on her face into the winrow, completely enveloping her in the hay. The other ladies and myself instantly sprang to her assistance; but as we removed the hay and lifted her up, we found she was more frightened than hurt, and that a slightly-torn dress, with her cap set a little awry, were the only damages sustained. At this we burst into a hearty laugh at her expense, in which she joined with great good humor, adding that she "should'nt misdoubt the Sargeant's rake agin as long as she was a livin' body." She then led off with her female train for the house.

Afternoon Lunch.—Past four o'clock soon came, and once more the fair Molly presented herself with her well-stored baskets. Excepting the ham, which had given place to some delicious custard pies, the contents were the same as in the forenoon. Again we adjourned to the old oak, and again the merry joke and laugh went round. Lunch over, Captain Truck was the first to rise and walk off towards his work; but in so doing, we observed, that he lurched a little first to the right and then to the left, and then his legs crossed each other in so peculiar a manner, that Uncle Sim took the liberty of asking him, "Whether his schooner was in a gale o' wind, with more sail on than it was comfortable to carry, or whether she had a little too much of good old 'New England' aboard, that water-logged her so badly?" At this the Captain stopped, turned round, gave a vehement gulp, put his rake head to his shoulder, pointed the end of the handle towards his interrogator, and squinting steadily along its surface, prepared to pull trigger, as if in the act of firing a musket, and then asked with a comical grin, if Mr. Doolittle wanted any owls shot." This question so tickled Cesar, who was lying flat on the turf, gnawing at the last remnant of a pie crust, that he involuntarily burst into a regular horse laugh, and exclaimed, "Golly, Massa Cap'n, you's got the wind'ard side on him dis tack." He then commenced kicking up his heels, and rolling over and over along the ground, like a well-filled water cask, in order to let off his exuberant feelings, but soon brought up with his protuberant seat hard against a large hassock of grass. Here he rested a moment, when up he bounded with an alertness that no one present thought him before capable of, and giving a loud yell, clapped both hands on his posteriors, and ran for the nearest hay cock as if he were mad. Into this he plunged as much of his long body as it was possible, took off his wide-brimed straw hat and twirled it round and round his head with the velocity of a top.

"What's the matter, you great lubber," cried the Captain, setting the end of the rake stale on the ground by way of support. "Hornet, Massa Cap'n, hornets 'nough to sting dis nigger to def." "Blow me, if there's a single one within speaking distance," replied the Captain, who by this time was well stirred up and quite himself again—"'twas only a wasps' nest you set on, you foolish woolly head, and not one of the yaller bellies as I can see" (still winking a little hard), "has followed you. So take a rake and go to work again, and do'nt frighten sober folks any more with your yellin'."

At this, we all followed suit, Captain Truck took the lead, and just after sundown we completed raking and cocking the hay. Uncle Sim now took off his hat, thanked us for our assistance, and hoped we would be on the ground with our teams as soon as the dew was off the next morning, to help get in the hay; he then invited us all up to supper.

The meal consisted of tea, an abundance of cold meats and vegetables left from the dinner, new

bread and butter, dough nuts and cheese, dried apple pie, and hasty-pudding and milk. The meats were scarcely touched, but we did ample justice to the rest of the good things on the table. Supper finished, we joined the ladies in the verandah, where, after chatting till about nine o'clock, each took his wife on his arm and returned home.

Gathering the Hay into the Barn.—No sooner was the dew off the cocks the next morning, than we were all on the ground again. With short hay forks in hand, we soon opened the tops of the cocks to the influence of the sun. As soon as this was done, we yoked up our teams, and commenced loading those first stirred. Here we had quite a strife for the leadership; but as usual, Major Goodell's smart, red cattle beat us all hollow, and proved the heroes of the day; Uncle Sim remarking, by way of comfort to myself, "that although it was sartin the Sargeant's big stags was'nt quite so fast as his hoss, yet to make amends, they was *dreadful sure;* and took sich loads to the barn, as not another pair o' cattle on the ground could begin to start. Yes, and he could say on 'em as the man said o' the elephant when he first seed him—'Wal, Old Ivory, with that long limber snout o' yourn, so ye're chained fast to the ground by one o' them 'ere delecate leetle legs are ye? Wal, I spose like that 'ere feller they call Atlas, I used to hear tell on, in my school-boy days, when ye do move, ye'll be sartin to take the airth with ye."

This comparative illustration of the strength of my cattle produced a loud laugh all round, but whether for or against me I did not stop to inquire. I know this, that we kept smartly at work, and by high noon, without any particular adventure, or misadventure, worth recording, we finished storing Mr. Doolittle's hay for him, in the best of order. Hereupon we adjourned to dinner, which, although Aunt Nabby pronounced "amazin' poor, and did'nt know as we should find a single dish fit to eat," yet it proved, if anything, superior to that of the preceding day. This finished, we took seats in the verandah, and after indulging in a half hour's chat all round, each man yoked up his team, and wended his way for his own home. Thus pleasantly and profitably ended Mr. Doolittle's "mowing bee." SERGEANT TELTRUE.

VARIOUS USES TO WHICH GLASS MAY BE APPLIED.

NOT only milk pans and cream pots, jars and flower pots, tiles and grape glasses, as well as various other horticultural and floricultural utensils, are already made of glass, but rolling pins and sundry other articles hitherto made of wood, metal, or clay. There are also bee glasses, propagating glasses, and glasses for protecting seeds.

It has been suggested that glass might be usefully substituted for metal to form the roofs of verandahs, thus obviating the darkening of rooms. For coal plates, area gratings, or the covering of cellars, where much light is required, and the top is to be used as a yard or passage, thick, rough, plate glass might advantageously be used; also for the risers, and even in some cases, for the tread of stairs, when light is required below, or to stairs underneath. Glass might also be formed into chairs, meat safes, larder shelves, tables, sideboards, washstands, sinks, taps, cisterns, the pipes for house drains, watch springs, coffins, and other articles two numerous to be mentioned.

LETTERS FROM ABROAD.—No. 3.

Season of the Vintage—Weather.—The time at which the vintage commences on the Douro, varies from the beginning of September to the middle of October, according to the nature of the season, whether wet or dry, hot or cold. As the rosy skins of the grape swell with luscious juice when approaching ripeness, they are daily watched—every change in the sky is observed—and the anxious vine grower prays that no rain may fall to rot the tender fruit, and fill his tonels with water instead of wine. If threatening clouds appear, the careful and more timid commence gathering their grapes ere they are fully ripe; the wise and bold, with more sagacity, allow theirs to hang, in hopes of the return of sunshine; but when the vintage has once commenced, time is invaluable to all. At this period there are employed in the whole Port-wine district, at least 20,000 Gallegos and half as many Portuguese men, women, and children.

Gallegos.—The Gallegos are hard-working countrymen, generally honest, from Galicia, in Spain, who leave their homes in search of employment in the Portuguese vineyards and larger towns, as porters, water carriers, and other inferior grades of servitude. They are most parsimonious in disposition, often subsisting on a dried herring and a piece of black bread for each meal, and sleeping in some wretched hovel at night, hardly fit for brutes. As soon as the vintage is ended, they return to their mountain homes, with five or ten dollars in pocket, which has been received as wages; or, perhaps, after years of toil, now and then an instance occurs, where one has accumulated $100 or $200, and retires to his native land to end his days in ease.

The Wine Press and Tonels.—The place in which the wine is made and pressed, is called in Portuguese, a *lagar*. It consists of a tank from twenty to thirty feet square, and from two to three feet deep, formed of massive stone work, laid in cement, being raised considerably above the ground, and sheltered by a roof, supported on masonry, or posts. At one side of the tank, generally in a lower building, there are large oaken tuns (tonels), often holding thirty pipes, so situated that the wine may flow freely from the press into them through a moveable gutter provided for the purpose. About midway above the tank, there is a heavy wooden beam, thirty or forty feet in length, confined at one end by a kind of socket, nearly on a level with the top of the tank, and weighed down at the other end by a large stone attached to a screw. When the men can no longer extract anything from the husks of the grapes, by treading, planks, or followers, are placed beneath this beam, and by the aid of the large stone and screw, the last remaining juice is pressed out.

Treading Out Wine.—While the men are carrying the grapes from the hill sides, and in emptying their baskets into the tanks, a boy stands, bare-legged, in the centre, levelling the bunches with a rake, as they are thrown in, so as to form an even surface. As soon as the tank is filled with grapes, from twenty to forty men jump in, with their trow-

sers rolled up, and commence treading, or rather dancing, to the sound of fiddles, guitars, fifes, and drums, accompanied by the wild chorus of their own voices, for the space of two days and as many nights, with six hours' rest between each eighteen, till the skins of the grapes are perfectly bruised, so as to extract every particle of their color, and their juice is completely expressed.

Fermentation of the Juice.—After the men retire from the tank, the juice, husks, and stalks are allowed to ferment together from two to six days. In the mean time, the husks and stalks rise to the surface of the liquid and form a compact mass; the color is still further extracted from the skins; and the stalks impart that astringent quality so much admired by all lovers of good Port wine.

Previous to drawing off the wine from the press into the tonels, it is of a dark, muddy color, sweet, nauseous, and sickening. The period at which it is thus drawn off, is the time when the rich and generous qualities of the grapes are liable to be lost or retained. At this critical moment, the future success of the operation almost entirely depends; for, in consequence of the richness of the Douro grape, the fermentation is generally so active, that, if suffered to remain too long in the press, it will be converted into a bitter liquid, unfit to drink, and of little, or no value, except for making into vinegar. Therefore, in order to retain those highly-prized qualities, it is absolutely necessary to add brandy to the juice before that stage which causes bitterness begins. Nothing, however, can enable one to judge of this critical point, except long experience and a perfect knowledge of the business.

The Addition of Brandy Indispensable.—Brandy always has been, and always must be, added to the richer and finer Port wines, which are intended for long keeping; for, from their very nature, they will overwork themselves, and, by exhausting their own strength, will ultimately be destroyed. 'Tis true, the grapes from which the richest of these wines are obtained, when hung up in the sun to dry, become complete masses of saccharine matter, or sugar; but this property is only possessed by those grown in positions most exposed to the sun, and afford that luscious and fruity flavor, of which no other wine can boast. With the poorer and more watery grapes, the fermentation, although less violent, will work out the little saccharine matter they contain, which will entirely disappear, in time; and a light, dry wine will be formed, requiring but little brandy to preserve it, for the very reason, that it possesses fewer good qualities to preserve. Thus, the commonest green wine of Portugal (vinho verde), will keep only a year without brandy, after which, it turns to vinegar.

Brandy Lost by Evaporation.—It must not be supposed, however, that, because brandy is added to wine, it there remains; for, in reality, it is lost by evaporation, in a very short time, particularly in hot weather, and consequently, when the wine is drunk, its strength has in no way increased, but on the contrary, has been diminished by age. On this point I shall speak more fully when further treating on the management of wine. F. R. S.

Upper Douro, Sept. 27th, 1847.

WEEDS should be destroyed when young.

VALUE OF GUANO.

As a Top-Dressing for Grass.—We have never yet found anything superior to guano, especially directly after mowing or close pasturing. Spread, broadcast, from 250 to 500 lbs. per acre, according to the fertility of the soil; if rain, or heavy dew, soon follow, the effect will be surprising. If the grass be cut, or depastured, early in the season, say by the last of June or fore part of July, we have repeatedly noticed, that the guanoed patches produced as great a second growth as that of the first. This is a matter of no small consideration to those who have only a small quantity of land, and are desirous that it should yield the greatest possible product. Another consideration is, guano gives the turf a greener and richer appearance than most kinds of manure; and will frequently bring in other highly nutritious grasses, which may not have made their appearance in the field for years before.

For Turnips, guano is a very valuable manure; and has the merit also of being extremely disagreeable to the fly. After the ground is prepared, spread the same quantity, broadcast, as upon grass, either before or after the turnip seed is sown, and then smooth over with a fine harrow, bush, or roller, or with all three, as may be most convenient. Some prefer to apply only half the quantity of guano at the time of sowing the seed, and add the other half when the turnip plant is in its first leaf. They think this method a better guard against the fly, and that the guano proves equally beneficial.

For Corn.—At the last hoeing, apply a heaping table-spoonful of guano around each hill, about six inches from the stalks, and with the hoe, mix it with the soil. It is very effectual in assisting the ears of corn to fill out with grain; and it adds also somewhat to the growth and nutriment of the stalk.

For Buckwheat, Wheat, and Rye.—As a top-dressing for these crops, at the time of, or after, sowing, guano has proved itself equal to the best of manures.

Strawberries and Other Fruits delight in guano. It increases the size of fruit of all kinds, and adds much to its delicacy and flavor.

For Various Other Crops, guano is highly recommended, by the most experienced farmers and gardeners, in cases where a large, quick growth is desired.

It is upwards of twenty years since guano was first introduced into the United States, and for the past five years it has been very extensively used, and highly approved of, by the farmers and gardeners in the neighborhood of Boston, New York, Philadelphia, Baltimore, Norfolk, Charleston, and New Orleans. For price, which is quite low, see advertisement.

A POSER FOR LIEBIG.—It is well known by all who are familiar with the writings of Liebig, that he has stated as his opinion, that plants derive *all* their azote (nitrogen), from the air. Against this opinion may be placed the conclusion at which Professor Kuhlmann, of Germany, has arrived, from careful and laborious experiment, namely:—*That if the air can supply sufficient azote for vegetation in its unaided, or natural condition, we can double that vegetation by the addition of azote to the soil!*

AMOUNT OF AGRICULTURAL PRODUCTS GROWN IN THE UNITED STATES, IN 1847.

THE following table exhibits the amount and value of the agricultural products grown in the United States, in the year 1847, as given in the Annual Report of the Commissioner of Patents, for that year:—

Articles.	*Bushels.*	*Value.*
Wheat,	114,245,500	$137,094,600
Indian Corn,	539,350,000	215,740,000
Barley,	5,649,950	4,519,960
Rye,	29,222,500	18,994,625
Oats,	167,867,000	41,966,750
Buckwheat,	11,673,000	5,836,500
Potatoes,	100,950,000	20,190,000
Beans,	25,000,000	25,000,000
Peas,	25,000,000	30,000,000
	Tons.	
Hay,	13,319,900	106,559,200
Hemp and Flax,	116,207	17,431,050
	Pounds.	
Tobacco,	220,164,000	11,008,200
Cotton,	1,041,500,000	72,905,000
Rice,	103,040,500	3,091,215
Sugar,	324,940,500	19,496,430
Silk Cocoons,	404,000	808,000
Hops,	1,510,972	151,097
Beeswax,	766,530	168,636
Honey,	22,995,900	2,299,590
	Gallons.	
Molasses,	13,000,000	3,250,000
Wine,	152,175	152,175

SUPERIOR SADDLERY AND HARNESSES.—If any of our friends are in want of these articles, we can confidently recommend them to the establishment of Mr. Thomas Walke, at 64 Broadway, where they will find a good assortment of superior manufacture, and at reasonable prices. We have never been so well fitted as here; and should be glad to show any one desirous of seeing it, a recently improved saddle of Mr. W.'s manufacture, that we daily have the gratification of bestriding over a high-spirited horse, which, for comfort and safety, is equal to the best Spanish or Mexican; and for lightness, ease, and thorough workmanship, is no way inferior to the highest-priced English.

MR. WILKINSON'S SALE.—We trust that all those interested in fine stock, will not fail to attend Mr. John Wilkinson's sale of choice Short-Horn stock, which is to take place at Germantown, Pennsylvania, on the 12th of this month. It is the herd that was bred by Mr. James Gowen, of Philadelphia, who transferred it to Mr. Wilkinson. Several of these cows are celebrated milkers, and the whole stock is highly deserving the attention of breeders.

COMPARATIVE VALUE OF INDIAN CORN AND BUCKWHEAT AS FOOD FOR HENS.—It is believed that a bushel of corn will last twice as long in feeding hens as a bushel of buckwheat, but the latter will make them lay eggs more than other grain, the profit thus overbalancing the cost.

MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY council of this association was held at London, on the 17th of May, from the proceedings of which we extract the following:—

Period of Suckling Young Animals—Mr. Wyatt Edgell, of Surrey, addressed to the council, through the president, a communication on the probable injurious effects arising from the circumstance of allowing young animals to take the milk for too long a period from their dams, especially in the cases of mares and ewes, which he conceived were impoverished by such a lengthened drain upon their constitutions, while their offspring were, at the same time, retarded in their growth and development, from the insufficient supply and inferior quality of milk they obtained under such circumstances. Mr. Edgell was led to the consideration of this subject from a perusal of the statement, made by the Rev. G. R. Glegg, in his travels in Hungary, that the high-bred foals, at the great stud, at Babohna, usually dying at four months old, from some vicious quality, as it was supposed, in the milk, they were removed from the mares at the end of the first month, and fed on boiled carrots, when it was found that not one fiftieth of the number of foals, that died under the old system, were lost under the new one. Without endeavoring to ascertain from what cause the milk in the case of the Hungarian mares had, probably, become vitiated, if a change in the quality of the milk had been the cause of the evil, Mr. Edgell thought the period of suckling the young of cattle a subject worthy of consideration.

This communication gave rise to an interesting discussion among the members present. Mr. Milward thought it might be assumed, as a general rule, that, under favorable conditions arising from the constitution of the mother, a requisite supply of proper food, and consequently an abundant secretion of healthy milk, the longer young animals sucked the better; and he could state, from his own experience in the case of Short-Horned cattle, that the calves could not acquire the full development in size or symmetry, unless reared on new milk for at least the first six months after their birth.

Sir Matthew Ridley did not think it advisable to leave calves with mothers which had become again in calf; in that case, as in the case of all choice stock, nurse cows would of course be provided.

Mr. Fuller had found that those calves were always the best which had been allowed to suck the longest.

Mr. Tweed considered that foals would be injured by sucking such mares too long as were actively kept at work.

Mr. Dyer was acquainted with a large flock master who constantly lost one tenth of his 500 ewes by allowing the lambs to remain with them till July; but who, from having last year weaned the lambs considerably earlier in the season, had lost a much smaller proportion of his ewes. Mr. Dyer conceived that by the middle of May, or as soon as lambs were four months old, and enabled to get their own food, when there was grass enough for them in the pastures, they might safely be weaned from the ewes; and that on the other hand, when the ewes were low in condition, disease must ne-

cessarily be occasioned by allowing the lambs to remain too long with them.

Mr. Milward thought that the loss sustained by Mr. Dyer's friend arose from the ewes being kept in too poor a condition, and not from the circumstance of the lambs being allowed to suck them for too long a period; it all depended upon the food a flock master had to give them.

Sir Matthew Ridley remarked, that there might be an evil in the too early weaning of lambs, as in that case the udders, from distention, unless milked by hand, would become sore and diseased. He thought that no general rule could be laid down on the subject, but that the weaning might advantageously take place when good grass was to be had by them, and in sufficient abundance, as both ewes and lambs at first destroyed the herbage to which they were put after weaning.

Mr. Glegg observed, that in Scotland the Cheviot ewes had their lambs removed from them about the 20th of August.

Prof. Sewell regarded the subject as one of great importance; and thought that if inquiry was instituted amongst practical farmers and breeders of sheep, much light might be thrown upon the origin of diseases still involved in obscurity, particularly in the case of young stock, which he considered to become victims to diseases too often attributed to food, soil, situation, or peculiarity of management. He had no doubt that a statistical account of the time of lambing and of weaning, and a statement of the dates at which, in different localities throughout the kingdom, grass or green crops are usually ready for ewes and lambs, would be attended with much practical benefit, as it was very likely that circumstances of situation and climate would be found to occasion much difference in the occurrence of those events; statements connected with lambing, weaning, and appearance of green food south of the Humber, not applying to districts north of that division of the country.

Sawdust Charcoal.—Mr. Woolrych Whitmore was led to make a few observations on the success with which he had employed charcoal obtained from sawdust, and the various refuse vegetable matter collected on his property, as a general manure for garden and field use, especially when mixed with bone, prepared according to the plan recommended by Mr. Pusey, in the proportion of one third bone with two thirds charcoal, employing water only as the liquid for moistening the heap, and of promoting the fermentation, and the result that was obtained in the course of a month or five weeks; and he had found no artificial manure at all equal to this fermented mixture. He found that raw sawdust did not succeed, but that charred sawdust, or sawdust charcoal, did admirably. He also ascertained that there was a mechanical advantage in sawdust, or wood charcoal, in producing this effect, not to be met with in charcoal obtained from couch grass, and other charcoal from plants, the latter appearing to be more compact, heavy, and impervious in its mechanical condition, which impeded its action in promoting fermentation. This charcoal was, therefore, employed alone as a top-dressing. Mr. Whitmore had not, at present, devised a convenient mode of reducing his sawdust to the state of charcoal; but he had no difficulty with other substances, such as couch grass and other weeds, the clippings of trees, cabbage stalks, &c.; these he piled round an upright pole into conical heaps, and covered them up with earth; the pole was then gently withdrawn, and a vacancy being thus left in the heap, from the bottom to the top, where the pole had occupied a space, a flue was formed which, after ignition, greatly facilitated the charring, or slow combustion of the surrounding vegetable matter.

Professor Way remarked that the use of charcoal in agriculture was by no means carried to the extent to which, in his opinion, it ought to be. It was a substance that stood midway between a chemical and a mechanical agent; absorbing to a great amount various gases and vapors, and especially the volatile ammonia so often produced during decomposition, and allowed to escape into the atmosphere. Had he not just heard from Mr. Whitmore that charcoal and bones mixed together underwent fermentation, he should have thought that charcoal would have had the effect of retarding or even of preventing that process. As ammonia was disengaged in the decomposition of bones, the presence of a porous substance with the imbibing properties of charcoal would at once secure that volatile element and prevent its escape, rendering the artificial manure produced so much the more valuable. He had understood from Mr. Parkes that Mr. Outhwaite, a friend of his in Yorkshire, who was an excellent practical farmer, converted not only the clippings of hedges and weeds, but also all his refuse straw into charcoal, which he employed largely on his land. Charcoal had long been employed as an antiseptic, removing from decaying bodies their ill odor, as well as their tendency to putrescence; and he believed that charcoal would be found one of the best preservatives from mildew in the turnip crop, that injury being understood to arise generally from a peculiar condition of the soil.

GREAT SALE OF THOROUGH-BRED STOCK.

We commend to the notice of our readers, the advertisements of Col. J. M. Sherwood, of Auburn, and Mr. L. F. Allen, of Black Rock. Their stock consists of very fine and highly-bred Short-Horn and Devon cattle; Cotswold, Southdown, and Merino sheep, which will be offered for sale, without reserve, at the Show of the New York State Agricultural Society, to be held at Buffalo, on the 5th, 6th, and 7th of September next.

We have been long conversant with the choice animals bred by each of these gentlemen, and can confidently recommend them to all such stock breeders as wish to improve their flocks and herds, or breed cattle and sheep of the best quality.

The offering of stock for sale in such large numbers at our cattle shows, is a new and valuable feature in the progress of the State Agricultural Society; and cannot but have a beneficial effect in inducing the visits of such as wish to make purchases. We trust that the efforts of Messrs. Sherwood and Allen may be crowned with success, and prove such as to induce other stock breeders annually to follow their laudable example.

DORKING FOWLS.

For those who wish to stock their poultry yards with fowls of the most desirable shape and size, clothed in rich and variegated plumage, and, not expecting perfection, are willing to overlook one or two other points, the speckled Dorkings, are the breed to be at once selected. [So called from a town in Surrey, which brought them into modern repute.] The hens, in addition to their gay colors, have a large flat comb, which, when they are in high health, adds very much to their brilliant appearance, particularly if seen in bright sunshine. The cocks are magnificent. The most gorgeous hues are frequently lavished upon them, which their great size, and peculiarly square-built form, display to the greatest advantage. The breeder and the farmer's wife behold with delight their short legs, their broad breasts, the small proportion of offal, and the large quantity of good profitable flesh. When fatted and served at table, the master and mistress of the feast are satisfied. The cockerels may be brought to considerable weights, and the flavor and appearance of their meat are inferior to none. Those epicures who now and then like a fowl killed by dislocation of the neck without bleeding (the more humane way), will find that this variety affords a tender and high-flavored dish. The eggs are produced in reasonable abundance, and though not equal in size to those of Spanish hens, may fairly be called large. They are not everlasting layers, but at due, or convenient intervals, manifest the desire of sitting. In this respect, they are steady, and good mothers when the little ones appear. They are better adapted than any other fowl, except the Malay, to hatch superabundant turkey's eggs. Their size and bulk enable them to afford warmth and shelter to the turkey poults for a long period. For the same reason, spare goose eggs may be intrusted to them; though, in this respect, I have known the pheasant breed to be equally successful.

With all these merits they are not found to be a profitable stock if kept thorough bred and unmixed. Their powers seem to fail at an early age. They are also apt to pine away and die, just at the point of reaching maturity. When the pullet ought to begin to lay, and the cockerel to crow and start his tail feathers, the comb, instead of enlarging and becoming coral red, shrinks and turns to a sickly pink, or even to a leaden hue; and the bird, however well fed and warmly housed, dies a wasted mass of mere feathers, skin, and bone. It is vexing, after having reared a creature just to the point when it would be most valuable for the table, or as stock, to find it "going light"; particularly as it is generally the finest specimens, that is the most thorough bred, that are destroyed by this malady. I do not believe that the most favorable circumstances would prevent the complaint, though unfavorable ones would aggravate it, but that it is inherent in the race and constitution of the birds. They appear at a certain epoch to be seized with consumption; exactly as in some unhappy families, the sons and daughters are taken off all much at the same age. In the speckled Dorkings the lungs seem to be the seat of disease, and it is to be regretted that no dissection was made in cases where I had the opportunity. But the serious and fatal maladies of fowls are difficult to trace to their cause, and still more difficult to cure by the application of any remedy.

Pure Dorking hens are sometimes barren. I had one a perfect model to the eye, short, square, compact, large, with plumage, comb, and weight all that could be wished—the very pullet that a fancier would have chosen to perpetuate the breed. But she never laid, nor ever showed any disposition to sit, and in consequence of her uselessness, at about two years old, was brought to table. The carving knife soon demonstrated a malformation of the back and side bones, and showed that the models of the breeder may sometimes be too highly finished. The cocks, too, with all their outward trappings and sturdy build, I must suspect to be deficient in vigor. If many hens are allowed to run with them, clear eggs will disappoint those who want large broods of chickens. Three, or at most four, hens to a cock will give the most successful results. These and a few other apparently trifling facts seem to show that, with the speckled Dorkings (a variety of great antiquity), the art of breeding has arrived at its limits.

As mothers, an objection to the Dorkings, is, that they are too heavy and clumsy to rear the chicks of any smaller and more delicate bird than themselves. Pheasants, partridges, Bantams, and Guinea fowls, are trampled underfoot and crushed, if in the least weakly. The hen, in her affectionate industry in scratching for grubs, kicks her lesser nurselings right and left, and leaves them sprawling on their backs. Before they are a month old, half of them will be muddled to death by this rough kindness. In spite of these drawbacks, the Dorkings are still in high favor; but a cross is found to be more profitable than the true breed. A showy, energetic game cock, with Dorking hens, produces chickens in size, and beauty, little inferior to their maternal parentage, and much more robust. Everybody knows their peculiarity in having a supernumerary toe on each foot. This characteristic almost always disappears with the first cross, but it is a point which can very well be spared without much disadvantage. In other respects, the appearance of the newly-hatched chicks is scarcely altered. The eggs of Dorking hens are large, very much rounded, and nearly equal in size at each end. The chicks are brownish-yellow, with a broad, brown stripe down the middle of the back, and a narrower one on each side; feet and legs yellow.

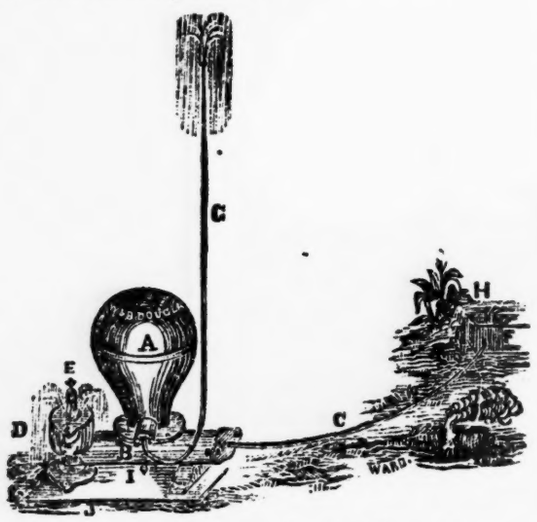
On this breed, Mr. Alfred Whitaker thus expresses his opinion:—"I agree with you fully as to the usefulness of this description of poultry, but I do not view them exactly through the same medium as to their beauty. Compared with the pheasant Malays, they are short-necked, and there is no arch nor crest to the neck. Their colors vary from a streaked grey to a mottled or spotted brown and white. A neighbor, here, has some of the finest I ever saw; the cocks with very full, double combs, and the hens generally with reddish-brown spots on a white ground. To my eye, the cocks look heavy and stupid, neither the head nor the tail being usually carried in an erect position, or with any semblance of spirit. As regards size, they are magnificent. I saw one on my friend's dinner table,

three days since, quite as large as an ordinary hen turkey; it was a cockerel about seven months old. My experience of their laying and breeding qualities agrees mainly with your statement, except that I should lay still stronger emphasis on their fatal clumsiness as mothers, which, I am inclined to think, is aggravated by their extra toe behind, and the great length of their back toes. They frequently trample to death their chickens during the process of hatching, and, in a small coop, they demolish them at a fearful rate. I think they never should be cooped with their chickens; but a still safer course would be to hatch the eggs under a mother of a less rough physique, or perhaps by Cantelo's hydro-incubator." The only question is, how the hen is to be employed when the sitting fit comes on, for they are most persevering sitters. I have successfully hatched both turkeys and geese under Dorking hens. The latter will stand a great deal of trampling and kicking about without taking much harm from it. Mr. Whitaker, continues, "I have crossed the Dorkings with pheasant Malays. The first cross produces a fine bird, which is large, though not prolific; but if you allow the cross to breed with each other, they dwindle to nothing. The doctrine of breeding is yet ill understood. I am disposed to think that, where you have a real variety, breeding in is the natural and best mode of procedure; but that when you cross two thoroughbreds, you have no guarantee that the cross breed will be good further than the first result."

The above remarks are condensed from a highly interesting communication, lately published on "Ornamental Poultry," other portions of which we propose to insert in a future number.

DOUGLAS' IMPROVED HYDRAULIC RAM.

This perfectly simple and effective machine may be employed for forcing a portion of a brook, or other stream of water, to any elevation or distance where a proportionate fall can be applied, for the purposes of irrigating lands, and supplying dwellings, gardens, factories, villages, engines, railroad stations, &c., with running water.



Douglas' Water Ram.—Fig. 58.

Explanation.—H, denotes the brook or stream; C, the drive or supply pipe for conveying the water from the stream to the ram; G, the pipe which conveys the water from the ram to the house or other point required for use; A, B, D, E, I, the ram.

The simplicity of the operation of this machine, together with its effectiveness, and very apparent durability, renders it decidedly the most important and valuable apparatus yet developed in hydraulics, for forcing a portion of a running stream of water to any elevation, proportioned to the fall obtained. It is perfectly applicable where no more than 18 inches fall can be obtained; yet the greater the fall applied, the higher the water may be conveyed, the quantity raised varying in proportion to the height, with a given fall. It will raise, say, one twelth of the water ten times the height of the fall to which it is applied. Thus, if applied under a fall of five feet, with a supply of twelve gallons per minute, it will force up and discharge, at an elevation of fifty feet from the machine, one gallon per minute; and under the same head, or fall, it will, of course, raise and discharge a larger quantity of water in proportion as the height to which it is conveyed is diminished, and so a less quantity a greater height.

This ram is constructed with an *adjuster*, which renders it decidedly superior to anything of the kind yet invented, as by this improvement the same machine may be conveniently varied in capacity, and at once *adapted to various-sized streams.*

These machines are composed of metal, and are a very neat, compact, and portable article. No. 4, the ordinary size, weighs but 35 lbs., and occupies only about a cubic foot of space.

The different sizes are applicable to springs, or brooks, which furnish, say, from one quart to twenty gallons per minute. If the stream is a large one, and a greater supply of water be required, then the number of machines may be increased in preference to having one machine of a larger capacity than above named.

In all cases the article is warranted complete and perfect, so as to give the best satisfaction, or it may be returned. Prices, from $12 to $18, exclusive of pipe.

Sale of Mr. Prentice's Herd.—Mr. E. P. Prentice, of Mount Hope, near Albany, has recently sold his entire herd of Short-Horn cattle, to Mr. George Vail, of Troy. We understand that this stock is principally derived from four of the cows of Mr. Prentice's importations from England, which he reserved to himself in his great sale three years ago. These cows, if we recollect rightly, were all very fine in their points, and good milkers. Mr. Vail contemplates breeding them to his celebrated Bates bulls, and we can but think that the produce will be such as to find favor among the stock growers of the country.

What is a Model Farm?—A model farm, if true to its name, is one upon which only the best practices are pursued; in other words, the *beau ideal* of a farm; and in order to become a model, it must necessarily show a greater annual return, in proportion to the outlay, than most of the neighboring farms.

DEATH OF TURPENTINE TREES.

We learn that some doubts exist at the north, relative to the death of turpentine trees, an account of which appeared in the *Chronicle* of the 3d inst. There is, unfortunately, no mistake in this statement, unless falling short of a full detail of the calamity may be considered such. We have personal acquaintances who have lost trees in this way, and have undoubted statements of their dying in lots of five, ten, and as high as one hundred thousand. One gentleman had his trees boxed, which run very well, but after the first dipping they all died. This fatality among the trees has been thus far felt more in Brunswick county than in any other quarter here, in which county alone the damage is estimated at $100,000. They still continue to die, and no one can calculate the extent to which the destruction may arrive. No satisfactory knowledge of the cause has been obtained, nor any remedy found.—*Wilmington Commercial.*

The cause of the dying of the trees above referred to, is doubtless owing to the ravages of the larvæ of the Pales weevil (*Hylobius pales*), and the pitch-eating weevil (*Hylobius picivorus*, of Harris). Wilson, the ornithologist, describes the depredations of these insects, in his account of the ivory-billed woodpecker, in the following words:—Would it be believed that the larvæ of an insect, or fly, not larger than a grain of rice, should silently, and in one season, destroy some thousand acres of pine trees, many of them from two to three feet in diameter, and a hundred and fifty feet high? Yet whoever passes along the high road from Georgetown to Charleston, in South Carolina, about twenty miles from the former place, can have striking and melancholy proofs of the fact. In some places the whole woods, as far as you can see around you, are dead, stripped of the bark, their wintry-looking arms and bare trunks bleaching in the sun, and tumbling to ruins before every blast, presenting a frightful picture of desolation. Until some effectual preventive or more complete remedy can be devised against these insects and their larvæ, I would humbly suggest the propriety of protecting and receiving with proper feelings of gratitude the services of this and the whole tribe of woodpeckers, letting the odium of guilt fall to its proper owners.

The larvæ live under the bark, devouring its soft inner surface, and the tender, newly-formed wood. When they abound, as they do in some of our pine forests, they separate large pieces of bark from the wood beneath, in consequence of which the part perishes, and the tree itself soon languishes and dies.

EFFECT OF TEMPERANCE SOCIETIES ON DISTILLERIES.

In a very elaborate paper lately published in the Report of the Commissioner of Patents, by Charles L. Fleischmann, Esq., it is stated that the president, Count Burghaus, opened a meeting of German agriculturists, at Breslau, some time since, with an appropriate address, giving a sketch of Silesian agriculture; and mentioned in it a fact which could not but please those interested in the noble cause of temperance. Prussian Silesia, he said, has heretofore had, to its population of 3,000,000, no less than the enormous number of 2,384 distilleries; and they have usually yielded to the government a yearly revenue of 998,000 thalers; but since the rise of temperance societies, during the first four months of the year, 1845, the product of this tax had fallen off to 150,582 thalers; a diminution, as compared with the same period, in 1844, of no less than one sixth. From this decrease of tax and drink, he, of course, argued a proportionate decrease of drunkards; of the grain consumed by distilleries, and of the total grain for which a market can be found; and hence he inferred that some agricultural labor must be diverted to other pursuits.

A CHEAP PAINT.

As this is the season of the year when the good housewife delights in furnishing up the homestead, and in making it and all its appendages look almost as good as new, we re-publish the following receipt for making a cheap paint. It is by Colonel Boyle, of Annapolis, a gentleman, who, notwithstanding the incessant claims upon his time in profession, still devotes a portion of it to rural occupations, and has, in times past, very acceptably occupied our pages, much to the edification and delight of our readers.—*American Farmer.*

To Make Paint.—Having been so frequently applied to for the following receipt, until it has become troublesome to give copies of it, I request you to publish it. James Boyle.

To make paint without white lead and oil. Take 2 quarts skimmed milk, 2 ounces fresh-slacked lime, 5 pounds whiting; put the lime into a stoneware vessel, pour upon it a sufficient quantity of milk to make a mixture resembling cream; the remainder of the milk is then to be added; and lastly the whiting is then to be crumbled and spread on the surface of the fluid, in which it gradually sinks. At this period, it must be well stirred in, or ground as you would other paint, and it is fit for use. There may be added any coloring matter that suits the fancy.

It is to be applied in the same manner as other paint, and in a few hours it will become perfectly dry. Another coat may then be added, and so on until the work is completed.

This paint is of great tenacity, and possesses a slight elasticity, which enables it to bear rubbing, even with a coarse woollen cloth, without being in the least degree injured. It has little or no smell, even when wet, and when dry is perfectly inodorous. It is not subject to be blackened by sulphurous or animal vapors, and it is not injurious to health. All which qualities give it a decided advantage over white lead.

The quantity above mentioned is sufficient for covering 27 square yards with one coat.—*Annapolis Republican.*

Color of Eggs.—Fowls, to which a portion of chalk is given with their food, lay eggs having shells remarkable for their whiteness. By substituting for chalk, a calcareous earth, rich in oxide of iron, the color of the egg shells will be of an orange-red.

Ladies' Department.

CAUTION IN THE CHOICE OF CULINARY UTENSILS.—No. 1.

In the choice of vessels for ordinary cooking, those made of copper or brass are to be preferred for several reasons. In the first place, they are better conductors of heat than those formed of cast iron, tin, or clay. Hence, less fuel is necessary to heat a certain quantity of water to the boiling point; secondly, they are less subject to oxidate, or rust, and consequently do not throw off scales, become thin, and finally leak, as some other metallic vessels do; and thirdly, from the saving of fuel they effect, and their durability, they are far superior to other metallic vessels generally in use. But let it be borne in mind, that all cooking vessels made of copper, or brass, such as stew pans, kettles, coffee urns, &c., should be well covered with a perfect coating of tin, not only on the inside, but about two inches below the top on the outside, and every time they are used, they should be cleaned and examined, in order to see whether the coating is perfect; for much mischief arises from their getting out of repair, and if not kept perfectly tinned, the food cooked in them is liable to look dirty and green, taste bitter, and become highly poisonous when introduced into the system.

Pure tin, in its metallic state, seems to have no injurious effect on the animal system, and hence, all vessels perfectly lined or covered with it, which are used for general cookery, such as cast-iron pots, kettles, and pans, or the articles of common tin-plate ware (sheet iron covered with tin), may be employed with safety. The tin of commerce, however, used for general tinning, is not pure, but contains traces of arsenic, copper, and lead, all three of which are highly poisonous. Yet the ordinary class of food, as meat, potatoes, &c., have no bad influence on these metals, when thus alloyed with tin; but much is to be feared from the action of acids, and vegetables containing sulphur, as vinegar, onions, greens, &c., because nearly all metals are more or less attacked by such substances.

C.

HOW TO MAKE GINGER SYRUP.

Soak, for twenty four hours, in warm water, one pound of West-India ginger root; rub it well, and boil it in one gallon of water till reduced to three quarts; strain it through a cloth, and to every pint of water put one pound of loaf sugar, and boil it to a good syrup, skimming it well. When cold, bottle it for use, and it will keep in a cool place, for any reasonable length of time; and a small quantity, mixed in a tumbler of fresh water, makes one of the most refreshing and healthful beverages that can be drunk during hot weather. It also has the double advantage of being easily made, and fit for immediate use. Another method, even less troublesome, is, to make a rich syrup of water and loaf sugar, and when cold enough to bottle, add to every pint of the syrup, two tea-spoonsfuls of the *best* tincture of ginger, which can be purchased at an apothecary's.

E. S.

BUTTER MAKING.

After reading the interesting article on "Butter Making" in your last number, I took up my pen to remark upon, and perhaps criticise it just a very little; but it is a subject of such never-ending dispute, that I concluded I had best let it alone. I will only say that I *never wash my butter*, as I think it deprives it of its fine flavor. If it is too soft to work, when taken out of the churn, it may *possibly* be necessary to plunge the lump into cold water in order to harden it, but I should prefer almost any other expedient. I would sink the butter tubs, or buckets (I use tin altogether), in the spring; or hang them, by ropes, down the well, to the surface of the water. But, instead of my wise remarks, I will give you an amusing occurrence, quite too good to be lost, that happened some summers ago, in Philadelphia, where they pride themselves, not without good reason, on their delicious butter.

A lady from New Orleans was on a visit to a friend whose husband loved the good things of this life so well, that he never trusted any one to market for him, and prided himself particularly on his choice of butter. He had frequently told her as an inducement to make this northern visit, that he would regale her with what she had never tasted—*fresh* butter. For several days, while at breakfast, he asked her if she had ever, even in her dreams, eaten such butter, so firm, so *fresh*, so delicious; and always received the same answer, that it was very good, but certainly not what she could call fresh butter. At last his good humor gave way, and fairly out of patience, he said one day, "I lived for twelve years in New Orleans, and never tasted an ounce of palatable butter—it was fit only to grease cart wheels with; and for you, accustomed to nothing better than such vile stuff, to pretend not to like this is perfectly absurd." "I did not say I did not like it, Cousin William," said the lady very pleasantly, "but it does seem very odd to hear you call it *fresh* butter, when the only fault I can point out is, that it has too much *salt* for my taste!"

E. S.

Eutawah, June, 1848.

HOUSEHOLD DRUDGES.

If the paper wasted in vain attempts to *soft soap* the ladies into washerwomen, could be restored to the pristine form, what a fine washing of clothes would there be, my countrywomen!

What could be a more beautiful illustration of womanly dependence and manly courage, than a lady gracefully cleaning handkerchiefs and laces, while her loving lord boldly wrestles with the counterpane and table cloths!

We will darn your stockings for you, gentlemen; we'll hem your handkerchiefs; we'll make your puddings; but while you continue to prefer smoking segars to smoking bacon; mauling each other with hard words in political debates, to the equally gentlemanly, and more useful employment of mauling rails, graciously condescending to pity our weakness—let us dance a little, let us make a little music, and Oh! leave us time to read and dress a little. Have compassion, kind sirs. Turn us not into water nymphs and salamanders!—*Grace Greenwood.*

Boys' Department.

AGRICULTURAL CHEMISTRY—No. 4.

Boys, as the elements of the air, including those of water, have now been described, our next business will be to consider the manner in which their influence is exerted in promoting vegetable growth. But first permit me to refresh your memories on some of the leading points of my previous letters. It is important that you should remember, 1st, that plants cannot contain a particle of matter which has not previously existed either in the atmosphere or the soil; 2d, that the essential constituents of the air are oxygen, nitrogen, carbonic acid, ammonia, and watery vapor; 3d, that carbonic acid and ammonia are compound gases, the former being composed of carbon and oxygen, the latter of hydrogen and nitrogen; 4th, that water is a compound of oxygen and hydrogen, and that it dissolves and holds in solution carbonic acid, ammonia, and many substances in the soil, which are essential to the growth of vegetables. I trust that you are now able to understand (as far as science can explain), the mode by which the elements I have described are absorbed by plants and made to enter into new combinations, such as contribute to the formation of woody fibre, leaves, fruit, seeds, &c.

I would next direct your attention to carbonic acid, and in order to show in what manner this gas can be of service to vegetation. All plants contain carbon, which, in their dried state, constitutes about one half of their weight—vegetable fibre being composed of 53 parts in 100 of carbon, 42 of oxygen, and 5 of hydrogen. The reason why charcoal is not always found on our hearths, after the wood is consumed, is, because it has nearly all united with the oxygen contained in the wood and air around it, and passed off in the form of carbonic acid. It is, in fact, this union of carbon and oxygen that produces combustion; for, when these two gases unite with rapidity, light and heat are always emitted; but when wood, or any species of vegetable fibre, is exposed to a high temperature *without* the presence of air or oxygen, the charcoal (carbon), which it contains remains, while the other elements are separated.

What has now been said is sufficient to convince you of the vast importance of carbon to vegetable existence, and it only remains to be shown how, and from whence it is obtained by plants. You may already have been informed that it is derived mainly from the atmosphere, and that the large amount of carbon, which plants require, could not be furnished entirely by the soil. Leaves of trees and plants continually absorb carbonic acid from the atmosphere, and transmit it to their branches, stems, and roots, where it is decomposed as it is needed, its carbon forming new connexions with certain other elements belonging to vegetables, and its oxygen mostly returned to the leaves and is restored again to the air. But plants do not appropriate *all* the carbon which is thus absorbed; for, the absorption of carbonic acid is going on both night and day, yet it is only during the day, or under the influence of light, that it is decomposed and its carbon appropriated—that which is absorbed during the night passing off with the water that is constantly evaporating from the leaves.

The atmosphere, then, may be regarded as the principal source for the supply of carbon, and the leaves of vegetables as the principal agents for obtaining it; yet a considerable portion of this important ingredient is undoubtedly derived from the soil, being absorbed and transmitted by the roots. As rain water always contains carbonic acid, and as the roots of plants are always imbibing moisture from the soil, they must necessarily supply more or less carbon. Other sources from which it may be obtained are vegetable and animal manures; still there are many reasons for believing that the whole amount of carbon derived from the soil is comparatively small. This subject will be resumed when treating of *humus*, or vegetable mould.

Your curiosity may be excited to know from what source the atmosphere receives sufficient carbonic acid to supply this immense demand. Unless there were a provision in nature for returning to the air an equivalent for the large quantity of this *gas*, which is thus drawn from it, there would indeed be a constant decrease, and finally a total exhaustion of carbonic acid. But Supreme Wisdom never committed such an error in designing and arranging the economy of nature. A wise provision is found for supplying, by animal respiration, as well as by the combustion and decay of animal and vegetable matter, the whole amount of carbonic acid consumed by plants, and thus a proper equilibrium is always maintained. Every breathing creature assists in this operation. The oxygen contained in the air we inhale unites with a portion of the carbon contained in the blood that passes through the lungs, thus forming carbonic acid, which is expired and given to the air. The amount of this gas, thus formed by an average-sized person, in twenty-four hours, is about five pounds, and the whole quantity given to the atmosphere by combustion and respiration, in the city of London and its vicinity, has been estimated at 10,000,000 tons annually. When life is destroyed by confinement in a close apartment, it is on account of the production of carbonic acid and consequent loss of oxygen by respiration.

From the facts above stated, we learn, that, if animals did not assist to supply the atmosphere with carbonic acid, trees and plants would at length become extinct, and if vegetables did not extract it from the air, it would, in time, accumulate to such an extent as to destroy animal existence. What an admirable illustration of the power and wisdom of the Deity! Even if no practical advantage were to be derived from scientific investigations, there would be the satisfaction of understanding the glorious operations of nature, and the elevation of mind and refinement of thought, which this department of knowledge can afford, yields an ample return for all the time and labor thus expended.

J. McKINSTRY.

Greenport, Columbia County, N. Y.
June 1st, 1848.

EXPERIMENT FOR THE BOYS.—How much water will a common dry brick absorb, if applied gradually, drop by drop, or by a very small stream?

FOREIGN AGRICULTURAL NEWS.

By the Steamer America, which arrived at Boston, in the unprecedented passage of ten days from Liverpool, we are in receipt of our foreign journals to the 3d of June.

Markets.—Ashes dull. *Cotton* was $\frac{1}{8}d.$ per lb. lower. *Flour, Wheat, and Provisions*, in limited request, at a slight reduction of price. *Indian Corn and Meal*, quite brisk, at a slight advance. In other articles, we notice little or no change.

Money is abundant at low rates of interest.

The Weather was uncommonly fine and the prospects of a good harvest never better.

Effect of Stopping Potato Shoots.—A farmer on the island of Valencia, in the county of Kerry, Ireland, on the 4th of April, when the stalks of his potatoes were about 9 inches high, pinched off half an inch from their tops, agreeably to the plan recommended by Dr. Klotzsch. On the 25th of the same month, the operation was repeated, and the result was, that the dwarf stems became much thicker, and appeared more vigorous than those in the other part of the field, which had been left to grow in the usual way.

Sale of the Late Lord Spencer's Stock.—The sale of the celebrated herd of Short-Horns of the late Lord Spencer, took place at Wiseton, on the 28th of May. The whole number of animals sold was 90, varying in prices from £19 to £189 for heifers and cows, and from £15 to £420 for bulls. The proceeds of the sale amounted to £5,743 10*s.*

It will be seen from the above sale, that Short-Horn cattle are as highly prized as ever, in England, for it seems one of the bulls brought about $2,000, and one of the cows over $900; and yet there are herds in that country, if put under hammer this day, would bring much higher prices on an average.

Resumption of Potato Culture in Ireland.—The cultivation of the potato has been revived in Ireland with increased eagerness. The most trustworthy accounts agree in representing, that, an enormous extent of land is already cropped with it. The peasantry have been selling their clothes, their bedding, and, in short, every saleable thing, in order to procure seed of this calamitous plant.

There seems to be a confident belief, among the Irish, that the potato disease has worn itself out, and they are probably right. For, it has been obvious that the plant has been improving in health for some time past, and that a sound crop may reasonably be accounted upon, for a little while, at least. But the inevitable result must be, sooner or later, a renewal of the famine, which has prevailed throughout the land with such indescribable horrors for a year or two past.

How to Kill Worms.—For lawns, use lime water—for gravel walks, corrosive sublimate.

How to Get Rid of House Bugs.—Pull down all loose paper, remove all loose plaster, take up all old carpeting, &c., and consume them with fire. Fill up all cracks in the walls and ceiling with a mixture of corrosive sublimate and plaster of Paris, or putty; also, all crevices in the floor, as well as the cracks in furniture and the joints of bedsteads, with corrosive sublimate and soft soap. By these means you will exterminate the bugs, but not otherwise.—*Foreign Paper.*

Ornamental Water Fowls are advertised for sale in London, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent and laughing geese, sheldrakes, pintail, widgeon, summer and winter teal, shovellers, Gadwall, Labrador, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin-China, Malay, Poland, Surrey and Dorking fowls; white Japan, pied and common pea fowl.

Fattening Poultry.—Coop up poultry to fatten, and they will do well up to 12 or 14 days. Keep them in the coops beyond that time, and feed them as much as you like, they will grow leaner every day until they grow a skinful of bones, and die.—*Agricultural Gazette.*

Glass Milk Pans are becoming in general use in England, and are advertised at 2*s.* each, when 12 inches in diameter, and 6*s.* when 26 inches in diameter.

Curious Mode of Making Butter.—If I want butter only for my own breakfast, I lay a sheet of blotting paper upon a plate, and pour the cream upon it. In a short time the milk filters through, and the butter is formed. If I wish to expedite the operation, I turn the paper over gently upon the cream, and keep it in contact for a few moments, and then press upon it, and the butter is formed in less than two minutes. If you submit it to severe pressure by a screw press, it becomes as hard as when frozen. I cannot think but the simplicity of this mode of proceeding would be universally adopted, if any better material than blotting paper could be thought of for the filter—the paper adhering too firmly to the butter, and the finest muslin admitting the passage of the cream.—*Gardener's Chronicle.*

Shoeing Horses.—At a meeting of the Royal Agricultural Society of England, some time since, Professor Sewell remarked that he had found old horses shod with a layer of leather, forming an artificial sole, between the shoe and the hoof, recover from the severe affections causing injury to the hoof; such, for instance, as contractions, brittleness, sand cracks, or even disease of the foot itself, as thrushes, canker, corns, &c. and perfectly regain its original elasticity and firmness. The mode in question had been practised by Professor Sewell for the last thirty years.

Mode of Bottling Fruit.—Fill the bottles quite full with fruit not quite ripe; place them, with the corks put lightly into them, into a copper of cold water up to the necks, and gradually raise the temperature of the water to 160°, and not exceeding 170° Fahr. Keep them at this temperature half an hour; then take each out separately and fill it up with boiling water from a kettle to within an inch of the cork. Drive in the cork firmly, tie it over, and dip it immediately into bottle wax, and lay the bottle down on its side to keep the cork always damp. To prevent fermentation, turn each bottle half round twice or thrice a week, for two or three weeks; after that, they will need no further care. The corks should be soaked in water two or three days before they are used.—*English Paper.*

Interesting Dairy Experiment.—Many observations have been made as to the best depth of milk for casting up the greatest proportion of cream. I lately found the following result. A lactometer of usual width, 10¼ inches high, gave 12 per cent. of cream. A glass vessel 2¼ inches wide, with 3½ inches depth of milk, yielded 3½ per cent. of cream; another vessel of glass, with two inches depth of milk, and 10¼ inches wide, yielded not quite 2 per cent. of cream. The milk was not a mixture, but all from one and the same cow, and stood 36 hours. This would warrant the opinion that cream is cast up in greater quantity when not placed in very shallow vessels. The cream was carefully taken off the two latter vessels and the skimmed milk put into a lactometer. That from the widest vessel gave 2 per cent. of cream, and that from the second in width about ½ per cent. [Here must be some mistake.] A thermometer placed near the vessels ranged from a little above 47° to nearly 50° the whole time.—*Gardener's Chronicle.*

Editor's Table.

ANNUAL REPORT OF THE COMMISSIONER OF PATENTS, FOR THE YEAR 1847.—We have received from Hon. Edmund Burke, Commissioner of Patents, at Washington, a very elaborate Congressional Document bearing the above-named title, of some 600 pages, illustrated by several wood cuts, and steel engravings. This report, we are happy to state, in our humble judgment, has been got up with more care, more ability, and has more intrinsic merit, than any other document of the kind that has preceded it. In addition to the sub-reports of the examiners of patents, which relate to matters appertaining only to the Patent Office proper, the volume contains a vast amount of agricultural knowledge, both practical and theoretical, as well as statistical, that reflects much credit upon the industrious and talented gentleman at the head of this department, and upon those who have so ably contributed to his aid. One article in particular, by Charles L. Fleischmann, Esq., we think specially claims the attention of American flock masters, stock breeders, and farmers in general, not that it is strictly applicable to this country, but more with the view of showing with what care and attention, what industry, patience, and perseverance, every operation of the farm is conducted at Breslau, in Prussian Silesia, and of stimulating our people to follow, as far as practicable, the same laudable example.

For several interesting articles condensed from this able report, the attention of our readers is invited to the columns of the present and succeeding numbers of the Agriculturist.

STATE OF VEGETATION IN NEW YORK.—May 23d, strawberries plenty in market, and the common locust tree in flower; 25th, cherries in market, and the the catalpa and paper mulberry in leaf. June 1st, the Isabella grape in flower; 15th, the ailantus in flower, and Catawba grapes as large as peas.

ADDRESS DELIVERED BEFORE THE N. Y. STATE AGRICULTURAL SOCIETY, ON THE FOOD OF PLANTS. By A. H. Stevens, M. D.—This is a neatly-printed pamphlet of twenty-two pages, and is evidently the result of much thought and observation. It contains many hints, both practical and theoretical, which are well worth the attention of the physiologist, as well as the farmer and the gardener.

HORTICULTURAL SHOW AT FLUSHING, LONG ISLAND.—This came off on the 14th and 15th of June, and is said to have been a superior show. A greater and choicer variety of the beautiful and useful of the season were exhibited than usual, showing that the Long-Islanders are in the broad road of improvement. We wish some friend who was present could have given himself the trouble to have made us a report, as it is quite impossible for an editor always to be present on such occasions.

ALBANY AND RENSSELAER HORTICULTURAL SOCIETY.—We are politely favored, by some unknown friend, with a full report in the Albany Argus, of the first exhibition of this society for the season, held at the Geological Buildings, in Albany on the 14th of June. The flowers, fruits, and vegetables were numerous and fine; and the show, upon the whole, was highly creditable to the counties from which the society takes its name. We notice that Dr. Herman Wendell, of Albany, has already introduced the celebrated Aberdeen bee-hive strawberry, and a new vegetable from China, called the "Hoosung". He says of it, "after being stripped of its leaves, it should be cooked and eaten in the same manner as asparagus, which the stems, in some degree resemble." Dr. W., also exhibited four new varieties of lettuce, viz: the artichoke-leaved, the Malta, the Swedish, or sugar, and the imperial Victoria rhubarb. The Malta is a remarkably bitter variety, but one which the committee believe, when eaten as a salad, prepared with the proper condiments, will be greatly relished by *bon vivants*. The artichoke-leaved variety is a curious but very agreeable one. So also is the sugar and imperial.

We are glad to notice that Dr. Wendell was rewarded by a discretionary premiun for his zeal and enterprise in introducing these new fruits and vegtables. Few gentlemen in the country are doing more than he for the advancement of the science of horticulture, and the introduction of new varieties of flowers, plants, and vegetables.

THE LARGEST CORN GROWER IN THE UNITED STATES.—It is said that the largest corn grower in America is William Polk, Esq., of Arkansas, a brother of the President. His crop last year was estimated at 100,000 bushels. The following is the result of his plantation:—Corn $70,000; cotton $16,000; pork $4,000; total produce of the year $90,000.

HOVEY'S FRUITS OF AMERICA.—The fifth number of this splendid publication has been received, containing colored figures and descriptions of the Late Duke Cherry; the Louise Bonne de Jersey, and Belle Lucrative Pears; and the Porter Apple. The original design of the work, has thus far been fully sustained, and certainly deserves the encouragement of all who are engaged in the cultivation of fruits. Price, in Royal Octavo, $1 per number—in Imperial Quarto, $2. C. M. Saxton, Agent, 205 Broadway, New York.

LARGE RHUBARB.—We have received from Mr. J. Brill, of Harsimus, N. J., an unusually large stalk of rhubarb (pie plant), weighing two and a half pounds, without the leaf. The soil in which it grew is a rich sandy loam, situated about one hundred yards from a salt meadow, with which it lies nearly level. The plant had no extra treatment with the exception of one or two waterings with liquid manure.

A GOOD HIT.—The following extract from the report of a committee on hogs, read before an eastern agricultural society, contains some capital hits at a class of bipeds, which are found, perhaps, in every populous town throughout the world:—"Some folks accuse pigs of being filthy in their habits and negligent in their personal appearance. But whether food is better eaten off the ground or from china plates, is, it seems to us, merely a matter of taste and convenience, about which pigs and men may honestly differ. They ought, then, to be judged charitably. At any rate, pigs are not filthy enough to chew tobacco, nor to poison their breath by drinking whiskey. And as to their personal appearance, you don't catch a pig playing the dandy, nor the females among them picking their way up this muddy village, after a rain, *in kid slippers!*

"Notwithstanding their heterodox notions, hogs have some excellent traits of character. If one chances to wallow a little deeper in some mire hole than his fellows, and so carries off and comes in possession of more of this earth than his brethren, he never assumes an extra importance on that account; neither are his brethren stupid enough to worship him for it. The only question seems to be, is he still a hog? If he is, they treat him as such. And when a hog has no merit of his own, he never puts on aristocratic airs nor claims any particular respect on account of family connexions; and yet some *Hogs* have descended from very ancient families. They understand full well, the common maxim, 'Every tub must stand upon its own bottom.'"

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, JUNE 14, 1848.

ASHES, Pots,	per 100 lbs.	$4 50	to	$4 56
Pearls,	do.	6 00	"	6 06
BALE ROPE,	lb.	6	"	8
BARK, Quercitron,	ton,	30 00	"	31 00
BEANS, White,	bush.	75	"	1 38
BEESWAX, Am. Yellow,	lb.	19	"	22
BOLT ROPE,	do.	11	"	12½
BONES, ground,	bush.	45	"	55
BRISTLES, American,	lb.	25	"	65
BUTTER, Table,	do.	15	"	25
Shipping,	do.	9	"	15
CANDLES, Mould, Tallow,	do.	11	"	13
Sperm,	do.	25	"	38
Stearic,	do.	20	"	25
CHEESE,	do.	5	"	10
COAL, Anthracite,	2000 lbs.	5 00	"	6 00
CORDAGE, American,	lb.	11	"	13
COTTON,	do.	4½	"	9
COTTON BAGGING, Amer. hemp,	yard,	15	"	16
FEATHERS,	lb.	30	"	40
FLAX, American,	do.	8	"	9
FLOUR, Northern, Southern and West'rn	bbl.	6 00	"	6 31
Fancy,	do.	6 50	"	7 00
Richmond City Mills,	do.	6 25	"	6 38
Buckwheat,	do.	—	"	—
Rye,	do.	3 50	"	3 75
GRAIN—Wheat, Western,	bush.	1 35	"	1 40
Southern	do.	1 05	"	1 25
Rye,	do.	72	"	73
Corn, Northern,	do.	60	"	61
Southern,	do.	53	"	56
Barley,	do.	65	"	75
Oats, Northern,	do.	41	"	48
Southern,	do.	40	"	45
GUANO,	100 lbs.	1 75	"	2 00
HAY, in bales,	do.	40	"	45
HEMP, Russia, clean,	ton.	225 00	"	230 00
American, water-rotted,	do.	160 00	"	220 00
American, dew-rotted,	do.	140 00	"	200 00
HIDES, Dry Southern,	do.	5	"	6
HOPS,	lb.	4	"	6
HORNS,	100.	2 00	"	10 00
LEAD, pig,	do.	3 75	"	3 80
Pipes for Pumps, &c	lb.	5	"	6
MEAL, Corn,	bbl.	2 25	"	2 75
Corn,	hhd.	12 50	"	13 00
MOLASSES, New Orleans,	gal.	20	"	24
MUSTARD, American,	lb.	16	"	31
NAVAL STORES—Tar,	bbl.	1 75	"	2 00
Pitch,	do	75	"	1 00
Rosin,	do.	65	"	75
Turpentine,	do.	2 50	"	2 75
Spirits Turpentine, Southern,	gal.	32	"	34
OIL, Linseed, American,	do.	66	"	67
Castor,	do.	1 50	"	1 70
Lard,	do.	55	"	60
OIL CAKE,	100 lbs.	1 00	"	1 15
PEAS, Field,	bush.	1 00	"	1 62
Black eyed, 2 do	do.	2 00	"	—
PLASTER OF PARIS,	ton.	2 25	"	3 00
Ground, in bbls.,	of 300 lbs.	1 12	"	1 25
PROVISIONS—Beef, Mess,	bbl.	8 00	"	11 00
Prime,	do.	5 25	"	7 50
Smoked	lb.	7	"	11
Rounds, in pickle,	do.	5	"	7
Pork, Mess,	bbl.	9 75	"	12 00
Prime,	do.	6 50	"	9 00
Lard,	lb.	6	"	8
Bacon sides, Smoked,	do.	6	"	8
In pickle,	do.	5	"	7
Hams, Smoked,	do.	8	"	13
Pickled,	do.	6	"	10
Shoulders, Smoked,	do.	6	"	9
Pickled,	do.	5	"	7
RICE,	100 lbs.	3 00	"	4 00
SALT,	sack,	1 30	"	1 40
Common,	bush.	20	"	35
SEEDS—Clover,	lb.	6	"	8
Timothy,	bush.	2 50	"	4 00
Flax, clean,	do.	1 35	"	1 40
rough,	do.	1 25	"	1 30
SODA, Ash, cont'g 80 per cent. soda,	lb.	3	"	—
Sulphate Soda, ground,	do.	1	"	—
SUGAR, New Orleans,	do.	2½	"	5
SUMAC, American,	ton,	35 00	"	37 00
TALLOW,	lb.	7	"	8½
TOBACCO,	do.	2½	"	7
WHISKEY, American,	gal.	22	"	24
WOOLS, Saxony,	lb.	35	"	60
Merino,	do.	30	"	35
Half blood	do.	20	"	25
Common do		18	"	20

NEW YORK RETAIL PROVISION MARKET.

Meats.—Beef, from 6 to 15 cents per lb.; Veal, 6 to 14 cents; Mutton, 6 to 15½ cents; Lamb, 10 to 15 cents; Ham and Bacon, 9 to 12 cents; Pork, 8 to 10 cents; young Pigs, $1 to $2 each.

Fish, &c.—Salmon, from 25 to 31 cents per lb.; Shad (Con. River), 25 to 31 each; Mackerel, 8 to 10 cents; Sea Bass and Black Fish, 8 cents per lb.; Halibut, 6 to 8 cents; Cod, 6 cents; Poggies, 5 cents; Green Turtle, 18 to 20 cents; Lobsters, 6 cents; Oysters, 50 cents to $1.25 per 100; Clams, 25 to 75 cents per 100.

Poultry and Eggs.—Turkeys, from 75 cents to $1.50 each; Chickens, 37 to 75 cents per pair; Ducks, 75 cents to $1 per pair; Pigeons, 75 cents to $1.50 per dozen; Eggs, 10 to 13 cents per dozen.

Dairy Products.—Butter, from 14 to 18 cents per lb.; Cheese, 7 to 9 cents; Cheese Cakes, 8 for 12½ cents; Milk, 3 to 5 cents per quart.

Ice.—25 cents per 100 lbs.

Fruit and Nuts.—Apples (Roxbury Russets), from $3 to $5 per bbl.; Red Streaks, $5; Apples in small quantities, 12 to 37 cents per half peck; Strawberries, 3 to 5 cents per half pint; Cherries, 8 to 12 cents per lb.; Green Gooseberries, 8 cents per quart; green Currants, 5 to 6 cents; Oranges, 18 to 50 cents per dozen; Lemons, 18 to 25 per dozen; Pine Apples, 12 to 37 cents each; Bananas, 37 to 75 cents per dozen; Chestnuts, $3 per bushel; Hickory Nuts $2 per bushel; Peanuts, $1.25 to $1.38 per bushel; Coco Nuts, 4 to 6 cents each; Pecan Nuts, 7 cents per lb.; Soft-Shelled Almonds, 12 to 14 cents; Filberts, Hard Shelled Almonds, and Madeira Nuts, 8 cents.

Vegetables.—Carter and Mercer Potatoes, from $1 to $1.25 per bushel; Flesh-Colored do. 62 to 75 cents; New Potatoes (southern), $1.75 per bushel; Sweet Potatoes, $1.25 per bushel; Onions (red), 18 cents per string; Onions (Bermuda), $2 per bushel; Young Onions and Leeks 6 cents per dozen; Cucumbers, 4 to 6 cents each; Tomatos (southern), 31 cents per quart; Rhubarb (pie plant), 5 cents per bunch; Pumpkins or Squashes (southern), 25 to 50 cents each; Jerusalem Artichokes, 50 cents per dozen; Cauliflowers, 18 cents per head; Young Cabbages, 6 cents each; Lettuces, 18 cents per dozen; Asparagus, 12 cents per bunch; Radishes, 12 cents per dozen bunches; Green Peas (in pods), 25 cents per half bushel; String Beans, 25 cents per half peck; Beets, 5 cents per bunch; New Turnips, 4 to 6 cents per dozen; Pot Herbs, 25 to 31 cents per barrel.

REMARKS.—Corn and Pork have advanced slightly since our last, while Hay has receded somewhat in price.

The Weather, though rather cold and rainy, has nevertheless proved very auspicious generally for the growing crops. The Wheat and Rye are all harvested at the south, and turn out well. At the north, the small grains are highly promising, and fast ripening for the sickle. Of Grass, we never saw a greater growth. If the weather prove reasonably favorable this month, an unusual quantity of hay will be made. Corn and Roots are looking finely. The early potatoes are turning out uncommonly well, and as yet, we hear of no rot among them. Sugar, Cotton, Rice, and Tobacco, with few exceptions, promise well. We have heard of some damage by the army worm, the wheat fly, rust, winter kill, &c. &c., but in so extensive a country as ours, such things are to be expected. However, complaints are fewer this year than we have ever known them.

TO CORRESPONDENTS.—Communications have been received from M. Thayer, Cato, W. R. Gray, and F. R. S.

Killing Apple-Tree Borers by Electricity.—W. B. W., of Fishkill, N. Y. You ask if the application of electricity with a machine of sufficient power to kill the apple-tree borer could be done without injury to the tree. We think it could not, as nothing short of a thunderbolt, in the way of electricity, would have much effect on the borer, when he is imbedded in the trunk of the tree. If any means could be devised to communicate a shock of electricity from any ordinary machine, directly upon these insects, instantaneous death would doubtless occur. We have heard several accounts of late where small birds were found dead suspended by their claws on the wires of telegraphs, which were supposed to have been killed by the electric fluid.

ACKNOWLEDGEMENT.—An Address delivered before the Rockland (N. Y.) County Agricultural Association, October 21st 1847. By A. B. Conger, Esq.

GUANO.

PATAGONIAN and African Guano, for sale at 2 cents per pound by AZEL DOWNS.

Bating Hollow, L. I., July, 1848. 3t

FIELD AND GARDEN SEEDS.

THE different varieties of wheat, rye, buckwheat, and other grain. Turnip, beet, carrot and cabbage seed of the kind suitable for stock feeding. Lucern, clover, Timothy, orchard grass, red top, ray grass, oat do. together with a select stock of Field and Garden Seeds, wholesale and retail, at the New York Agricultural Warehouse and Seed Store, 189 and 191 Water street.

A. B. ALLEN & CO., 189 Water st.

ARTIFICIAL MANURES, &c.

ATWATER'S AMERICAN COMPOUND OF MANURES, composed of fertilizing materials, and is designed for growing garden vegetables, fruit trees, vines, and ornamental flowers or plants of every description, as well as for general crops. The quantity required per acre, will vary from 30 to 50 bushels, according to the condition of the land to which it is applied. Price, 40 cents per bushel.

BOMMER'S FERTILIZING POWDER, long been celebrated in France for cultivating garden vegetables of all kinds, greenhouse plants, flowers, wall fruit, field crops, &c., &c. Quantity requisite per acre, from 12 to 18 bushels, to be sown broadcast on the surface and hoed or harrowed in. Price $5 per cask of 425 lbs

LE DOYEN'S PATENT DEODORIZING, OR DISINFECTING FLUID, designed for destroying putrid smells arising either from animal or vegetable decomposition; also, for immediately purifying sick rooms, water closets, sesspools, steerages of passenger ships, bilge water, &c., &c.; but mainly for destroying the odor of night soil and converting it into a fertilizing compound applicable as manure. Quantity required to deodorize a common privy, for three or four months, from two to five gallons. Price, 50 cents per gallon. For sale by

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MOUNT-AIRY AGRICULTURAL INSTITUTE.

THIS Institution is located at Mount Airy, Germantown, Pa., (see cut p. 217 of this number), seven miles from the city of Philadelphia, and is accessible several times a day both by stage and railroad.

The site is proverbial for its salubrity, and is, in every respect, eminently adapted to the objects of an Agricultural Seminary.

The system of instruction is such as to afford the student every facility for acquiring a thorough knowledge of Scientific and Practical Agriculture, with the use of the best modern farm implements and machinery. But the subjects which receive attention are not such as are calculated to make *farmers merely*. The institution is a literary one, of which the department of agriculture forms an important and distinguishing branch, and it will afford the best opportunities in regard to commercial and classical education. Here, therefore, young gentleman may prepare for the COUNTING HOUSE, for COLLEGE, or for any other respectable course or profession.

To secure these ends, the branches to be pursued, and the facilities enjoyed, are briefly as follows:—The subjects being arranged under four heads or courses —the *General Primary* the *Agricultural*, the *Commercial*, and the *Classical*.

GENERAL PRIMARY COURSE.

This consists of the ordinary English studies, and also includes simple Book Keeping, general mathematics, as Geometry, Algebra, &c., the Science of Government, and the Principles of Laws.

AGRICULTURAL COURSE.

Instruction in Natural Philosophy, particularly Mechanics, Hydraulics, and Pneumatics, and their connection with the construction of implements, and the movement of machinery. Also the Natural Sciences generally, including Elementary and Agricultural Chemistry, with practice in the *analysis of soils*, and their varied products. Mineralogy and Geology, as well as Botany, and the Physiological Structure and Economy of the Vegetable Kingdom, will receive special attention. Entomology, and other branches of Natural History, will be attended to.

Those applications of mathematics which interest the culturist, will form a portion of this course; Surveying, Trigonometry, Leveling, Mensuration, &c., with the use of Instruments, Field Practice, and Mapping. The Sketching of Implements, Animals, Views from Nature, and Architectural and Perspective Drawing, will receive a due share of attention

The practical facilities which the institution has the means of affording in this course, cannot be surpassed. There are seventy acres of tillable land, which has been for years under a highly judicious method of cultivation. The farm being that, so favorably known to the agricultural community, recently occupied by James Gowen, Esq.

The students engage directly in all that is connected with every description of crop to which the climate is adapted. There being an abundance of fruit, and ornamental trees and nurseries on the premises, their care and management occupy much attention The gardens, the exotic plants, and the shrubbery, are such as to afford the advantages of instruction in Horticulture and Floriculture.

Particular attention is given to the management and breeding of Domestic Animals. The farm supports a large herd, and the students are expected to have the most complete knowledge of all that is connected with such particulars.

A library of American and European works, and the agricultural journals of the country, are furnished for the reading of the students.

To complete a *full course* in this department, *the term of four years will be necessary.*

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Book Keeping by Double Entry, Business Arithmetic, and Commercial Forms and Correspondence, will be taught in the best manner.

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This includes the Greek and Latin Languages, and the necessary preparation for any class in College.

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These embrace any, not before enumerated, that it may be desirable for students to pursue. Music, French, and the Modern Languages can be advantageously attended to.

The nature of the institution is, therefore, such, that here, free from circumstances that are repulsive, and from influences that are immoral, in a location attractive and healthful, on extensive grounds, and surrounded by whatever can incite to study, to exertion, and to ennobling employment, students may, by the assistance of competent and experienced teachers, with whom they are associated as members of the same family, enjoy the most desirable opportunities, and prepare themselves to occupy respectable and useful positions in society.

The year is divided into two sessions; the first session beginning on the first Thursday of April, the second on the first Thursday of October.

Terms $125 *per session, payable in advance—including bed, bedding, washing, mending, fuel, and lights.*

This sum embraces all charges for instruction in the *four courses* referred to; it does not include incidentals, but at the option of the Principal.

Address the Principal, JOHN WILKINSON,
Mount Airy Agricultural Institute, Germantown, Pa.

REFERENCES.

James Gowen, Esq., Phila., Pa.	Hon. A. Conkling, Auburn, N. Y.
Robert Ewing, Esq., "	Ex-Gov. W. C. Gibbs, Newport,
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Office No 40 *Wall Street, N. Y.*

LIFE INSURANCE, upon the plan adopted by this Company, is founded upon the principle of *contribution* in the shape of annual premiums to a common fund, proportioned to the amount insured, out of which the Company pay a stipulated sum on the death of the assured to the person for whose benefit the insurance is effected.

After a thorough investigation of the different systems adopted in Europe and America, and of the rates of premium charged, this company have reduced the premium 25 *per cent.* payable in cash, annually, semi-annually, or quarterly, as may be preferred, under a firm conviction that the exigencies of the Company will never exceed and seldom require *one half* of the annual premium now charged by the English and American Companies, which reduction will still leave a large margin for seasons of unusual sickness and death among its members—preferring to reduce the premiums at once to an amount more nearly approximating the actual necessities of the Company than to adopt the system of *premium notes* which is attended with many disadvantages.

The leading features of this Company are—

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4. Insurance may be effected by any married woman upon the life of her husband, for her sole use and benefit, free from any claims of the representatives of her husband, or any of his creditors.

5. No personal liability of the members beyond the amount of their annual premium of insurance.

6. Creditors may insure the lives of their debtors, or debtors themselves may insure for the protection of their creditors.

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A. B. ALLEN & CO. have removed from No. 187 Water street, to the large and commodious stores next above, No. 189 and 191, where will be found a large and very complete assortment of Agricultural Implements and Seeds of all kinds, for the Southern and Western, as well as the Northern and Eastern markets.

A Catalogue of the above, of 100 pages, with numerous illustrations, will be sent gratis to all who apply for it, post paid.

New York Agricultural Warehouse and Seed Store, 189 and 191 Water street, New York. A. B. ALLEN & CO.

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References, A. B. Allen, N. Y.; Sanford Howard, and B. P. Johnson, Albany; Francis Rotch, Butternuts; and L. F Allen, Black Rock. J. M. SHERWOOD.

Auburn, May 16th, 1848. 3t

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Mt. Airy Agricultural Institute, *Germantown, Pa., May 28th*, 1848. 1t

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LEWIS F. ALLEN.

Black Rock, N. Y., July, 1848. 3t.

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